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NAVIGATION

The Project Gutenberg EBook of *A Historical Account of Useful Inventions and Scientific Discoveries*, by George Grant

The sacred records inform us that the ark of Noah was the first ship, and produced by the invention of the great Architect of Nature himself; and “though some men have so believed,” says the learned and ingenious Sir Walter Raleigh, in his “History of the World,” “yet it is certain the world was planted before the flood, which could not be performed without some transporting vessels. It is true, and the success has proved that there was not any so capacious, nor any so strong, as to defend themselves against so violent and so continued a pouring down of rain, as the ark of which Noah was the builder, from the invention of God himself. Of what fashion or fabric soever were the rest, with all men they perished according to the ordinance of God.” And it appears extremely probable that those testimonials, whereof Ovid speaks of former existence, were remains of ships wrecked at the general flood.

There can be no question that the Syrians were the first maritime power in the world, as well in point of time as importance;--but of what species of construction their vessels were, we are not informed. Their merchants trading to the Eastern Indies, as they did for Solomon; to Ophir, whence they brought gold; and also to this country for tin, and their having made three distinct descents upon America, will enable us to maintain this our opinion. After them the Greeks, a people living chiefly on the shores of the Hellespont and Ægean seas, with many islands in the Mediterranean, Adriatic, and Archipelagion Seas, besides their possessions in Asia Minor, and their commerce with the European Continent, obtained the next power by sea. We read indeed, that Minos, the famous Cretan sovereign and legislator, who lived two descents before the Trojan war, sent out shipping to free the Grecian seas of pirates; which shows, as Sir Walter Raleigh ingeniously infers, that there had been trade and war upon the waters before his time also.

The next in point of time and importance on record was the highly renowned expedition of the Argonauts for the golden fleece to Colchis, a country of Asia, on the Euxine sea. Immediately after this was the colonization of Cyrene, in Africa, by Battus, one of the companions of Jason, in his Colchian expedition. Shortly afterwards, the Grecian states united against Phrygian treachery and the abuse of Grecian hospitality; forming another most memorable epoch in the history of the world. We are informed the Grecian Neptune, or as mythology styles him a God of the Saturnian family, for the great service he did his father, Saturn, or Noah, against the Titans, had the seas given to him. History informs us that the first inventor of rowing vessels was a citizen of Corinth; and likewise that the first naval war was between the Samians and Corcyrians. The history of Ithicus, translated into Latin by St. Jerome, affirms that Griphon, the Scythian, was the inventor of long-boats; and Strabo also gives the honour of the invention of

the anchor to another Scythian, the famous Anacharsis, whilst Greece herself by her historians, ascribes its invention to Eupolemus. Also, it is said, that Icarus invented the sail, and others, various other pieces of the component parts of ships and boats. The specification of such other imperfect memoirs, many of fabulous appearance, may be of no great importance.

It appears certain that among the four sons of Javan, the son of Japhet, the grandson, and other the posterity of Noah, who peopled the "Isles of the Gentiles," the Grecian Islands must long before the days of Minos have used those seas, from the insular nature of their inhabitants. And it certainly does not appear extravagant to us, to presume that this people were among the first who navigated the seas. Mankind in various parts of the world, being stimulated by the same necessities, urged by the same wants, and possessing the same means, might probably produce similar inventions to each other. Most, indeed, had occasion to navigate lakes, and cross rivers. They accordingly constructed such machines as would answer their purpose of passage or migration. So were rafts and canoes, formed of canes, osiers, twigs, &c., where they grew, which they fashioned like boats, and then covered with skins of various animals; others formed rafts of wood; whilst some others fashioned canoes, having hollowed out trees for that purpose. One way or other, each people thus possessed a marine, proper for their purpose it is true, but in various degrees of excellence. This was the case with Greeks as well as barbarians of all nations; all these people, excepting the immediate descendants of Noah, might, perhaps, lay a feasible claim to the honour of the original invention of these articles; and, having never seen such, they virtually have each a good title to the distinction. Indeed, many of them might have taken the idea for such invention from the policy of certain animals, and the nature of others; to instance the sagacity of the beaver and his raft, and the little nautilus with his swelling sail: hence they might have adopted from that animal, and that piscatory insect, the idea of a raft, and also of a vessel with a sail.

In latter days we find the Teutonic Saxons first came to this country, according to Mr. Turner, the Anglo-Saxon historian, in vessels they called *_cyules-kells_* by Sir Walter Raleigh. Marine vessels have borne a variety of names, as well as of numerous figures, from the gondola of the Venetian to the canoe of the Esquimaux,--the British man-of-war to the ponderous bonaventure in which the Doge annually espouses the sea.

All those nations, too, through whose hands the maritime power has passed, from time to time, as they have been instructed by experience, or taught by necessity, might repeatedly have made additions and improvements in naval architecture: some calculated for mercantile utility, while others have only attended to warlike strength, and some to answer both purposes, like our Indiamen. But now, the British navy, being supplied with the best materials, and having as ingenious workmen as any, with the addition of the warlike children of the soil, may openly defy all nations, and proudly claim the sovereignty of the seas where her flag has been flying 'midst the battle and the breeze for so many years.

But the most important improvement in Navigation--propelling vessels by steam--has been left to our own times. The steam-engine was first applied to small vessels for the coasting or river trade; but it has

now increased to vessels of the largest size,--in fact, the most part of the British navy are steamships. In former times before the introduction of this valuable auxiliary, the passage between England and America was tedious and uncertain, sometimes taking months, but rarely less than from four to six weeks, according to the state of the weather; but now the case is altered. There are a regular line of steamships, one of which leaves Liverpool every week, and the voyage is performed with almost positive certainty in from twelve to fourteen days, independent of the rude Boreas, or the boisterous Atlantic. These vessels are of the largest size and handsomely fitted up for the accommodation of passengers.

LE RÊVE D'UN NÈGRE

Project Gutenberg's *Contes humoristiques - Tome I*, by Alphonse Allais

Mathias, un superbe nègre d'origine cafre, d'une vingtaine d'années (peut-être un peu plus, mais pas beaucoup), s'étend sur des nattes, dans un coin de sa case, et rêve mélancholieusement.

C'est demain Noël, et toutes les légendes relatives à ce divin jour lui chantent dans la tête et dans le coeur.

Mathias est un superbe nègre, mais c'est un nègre solitaire dont l'âme a du vague.

Puis une torpeur s'empare de ses sens, et voilà qu'il rêve.

Ses souliers, qu'il a mis dans la cheminée (en rêve, bien entendu, car sa case ne comporte qu'un petit poêle économique de fabrication américaine), prennent des proportions démesurées.

Ses souliers se modifient également quant à leur forme, et tendent à revêtir l'aspect d'une gondole.

Puis la gondole se met à voguer sur je ne sais quel lac d'amour, et c'est lui qui la mène, lui, Mathias.

À l'arrière, une fine brume enveloppe comme un voile... une femme peut-être?

Oui, une femme!

Un petit zéphyr de rien du tout dissipe la brume qu'absorbe l'eau du lac, et Mathias pousse un cri.

Cette femme est la femme qu'il aime.

NATURE OR NURTURE?

The Project Gutenberg EBook of *Applied Eugenics*, by
Paul Popenoe and Roswell Hill Johnson

At the First Race Betterment Conference held at Battle Creek, Mich., many methods were suggested by which it was believed that the people of America might be made, on the average, healthier, happier, and more efficient. One afternoon the discussion turned to the children of the slums. Their condition was pictured in dark colors. A number of eugenists remarked that they were in many cases handicapped by a poor heredity. Then Jacob Riis--a man for whom every American must feel a profound admiration--strode upon the platform, filled with indignation.

"We have heard friends here talk about heredity," he exclaimed. "The word has rung in my ears until I am sick of it. Heredity! Heredity! There is just one heredity in all the world that is ours--we are children of God, and there is nothing in the whole big world that we cannot do in His service with it."

It is probably not beyond the truth to say that in this statement Jacob Riis voiced the opinion of a majority of the social workers of this country, and likewise a majority of the people who are faithfully and with much self-sacrifice supporting charities, uplift movements, reform legislation, and philanthropic attempts at social betterment in many directions. They suppose that they are at the same time making the race better by making the conditions better in which people live.

It is widely supposed that, although nature may have distributed some handicaps at birth, they can be removed if the body is properly warmed and fed and the mind properly exercised. It is further widely supposed that this improvement in the condition of the individual will result in his production of better infants, and that thus the race, gaining a little momentum in each generation, will gradually move on toward ultimate perfection.

There is no lack of efforts to improve the race, by this method of direct change of the environment. It involves two assumptions, which are sometimes made explicitly, sometimes merely taken for granted. These are:

1. That changes in a man's surroundings, or, to use the more technical biological term, in his nurture, will change the nature that he has inherited.
2. That such changes will further be transmitted to his children.

Any one who proposes methods of race betterment, as we do in the present book, must meet these two popular beliefs. We shall therefore examine the first of them in this chapter, and the second in Chapter II.

Galton adopted and popularized Shakespeare's antithesis of nature and nurture to describe a man's inheritance and his surroundings, the two terms including everything that can pertain to a human being. The words are not wholly suitable, particularly since nature has two distinct meanings,--human nature and external nature. The first is the only one considered by Galton. Further, nurture is capable of subdivision into

those environmental influences which do not undergo much change,--e.g., soil and climate,--and those forces of civilization and education which might better be described as culture. The evolutionist has really to deal with the three factors of germ-plasm, physical surroundings and culture. But Galton's phrase is so widely current that we shall continue to use it, with the implications that have just been outlined.

The antithesis of nature and nurture is not a new one; it was met long ago by biologists and settled by them to their own satisfaction. The whole body of experimental and observational evidence in biology tends to show that the characters which the individual inherits from his ancestors remain remarkably constant in all ordinary conditions to which they may be subjected. Their constancy is roughly proportionate to the place of the animal in the scale of evolution; lower forms are more easily changed by outside influence, but as one ascends to the higher forms, which are more differentiated, it is found more and more difficult to effect any change in them. Their characters are more definitely fixed at birth.[1]

It is with the highest of all forms, Man, that we have now to deal. The student in biology is not likely to doubt that the differences in men are due much more to inherited nature than to any influences brought to bear after birth, even though these latter influences include such powerful ones as nutrition and education within ordinary limits.

But the biological evidence does not lend itself readily to summary treatment, and we shall therefore examine the question by statistical methods.[2] These have the further advantage of being more easily understood; for facts which can be measured and expressed in numbers are facts whose import the reader can usually decide for himself: he is perfectly able to determine, without any special training, whether twice two does or does not make four. One further preliminary remark: the problem of nature vs. nurture can not be solved in general terms; a moment's thought will show that it can be understood only by examining one trait at a time. The problem is to decide whether the differences between the people met in everyday life are due more to inheritance or to outside influences, and these differences must naturally be examined separately; they can not be lumped together.

To ask whether nature in general contributes more to a man than nurture is futile; but it is not at all futile to ask whether the differences in a given human trait are more affected by differences in nature than by differences in nurture. It is easy to see that a verdict may be sometimes given to one side, sometimes to the other. Albinism in animals, for instance, is a trait which is known to be inherited, and which is very slightly affected by differences of climate, food supply, etc. On the other hand, there are factors which, although having inherited bases, owe their expression almost wholly to outside influences. Professor Morgan, for example, has found a strain of fruit flies whose offspring in cold weather are usually born with supernumerary legs. In hot weather they are practically normal. If this strain were bred only in the tropics, the abnormality would probably not be noticed; on the other hand, if it were bred only in cold regions, it would be set down as one characterized by duplication of limbs. The heredity factor would be the same in each case, the difference in appearance being due merely to temperature.

Mere inspection does not always tell whether some feature of an individual is more affected by changes in heredity or changes in surroundings. On seeing a swarthy man, one may suppose that he comes of a swarthy race, or that he is a fair-skinned man who has lived long in the desert. In the one case the swarthinness would be inheritable, in the other not. Which explanation is correct, can only be told by examining a number of such individuals under critical conditions, or by an examination of the ancestry. A man from a dark-skinned race would become little darker by living under the desert sun, while a white man would take on a good deal of tan.

The limited effect of nurture in changing nature is in some fields a matter of common observation. The man who works in the gymnasium knows that exercise increases the strength of a given group of muscles for a while, but not indefinitely. There comes a time when the limit of a man's hereditary potentiality is reached, and no amount of exercise will add another millimeter to the circumference of his arm. Similarly the handball or tennis player some day reaches his highest point, as do runners or race horses. A trainer could bring Arthur Duffy in a few years to the point of running a hundred yards in 9-3/5 seconds, but no amount of training after that could clip off another fifth of a second. A parallel case is found in the students who take a college examination. Half a dozen of them may have devoted the same amount of time to it--may have crammed to the limit--but they will still receive widely different marks. These commonplace cases show that nurture has seemingly some power to mold the individual, by giving his inborn possibilities a chance to express themselves, but that nature says the first and last word. Francis Galton, the father of eugenics, hit on an ingenious and more convincing illustration by studying the history of twins.[3]

There are, everyday observation shows, two kinds of twins--ordinary twins and the so-called identical twins. Ordinary twins are merely brothers, or sisters, or brother and sister, who happen to be born two at a time, because two ova have developed simultaneously. The fact that they were born at the same time does not make them alike--they differ quite as widely from each other as ordinary brothers and sisters do. Identical twins have their origin in a different phenomenon--they are believed to be halves of the same egg-cell, in which two growing-points appeared at a very early embryonic stage, each of these developing into a separate individual. As would be expected, these identical twins are always of the same sex, and extremely like each other, so that sometimes their own mother can not tell them apart. This likeness extends to all sorts of traits:--they have lost their milk teeth on the same day in one case, they even fell ill on the same day with the same disease, even though they were in different cities.

Now Galton reasoned that if environment really changes the inborn character, then these identical twins, who start life as halves of the same whole, ought to become more unlike if they were brought up apart; and as they grew older and moved into different spheres of activity, they ought to become measurably dissimilar. On the other hand, ordinary twins, who start dissimilar, ought to become more alike when brought up in the same family, on the same diet, among the same friends, with the same education. If the course of years shows that identical twins remain as like as ever and ordinary twins as unlike as ever, regardless of changes in conditions, then environment will have failed to demonstrate that it has any great power to modify one's inborn nature in these

traits.

With this view, Galton collected the history of eighty pairs of identical twins, thirty-five cases being accompanied by very full details, which showed that the twins were really as nearly identical, in childhood, as one could expect to find. On this point, Galton's inquiries were careful, and the replies satisfactory. They are not, however, as he remarks, much varied in character. "When the twins are children, they are usually distinguished by ribbons tied around the wrist or neck; nevertheless the one is sometimes fed, physicked, and whipped by mistake for the other, and the description of these little domestic catastrophes was usually given by the mother, in a phraseology, that is sometimes touching by reason of its seriousness. I have one case in which a doubt remains whether the children were not changed in their bath, and the presumed A is not really B, and *_vice versa_*. In another case, an artist was engaged on the portraits of twins who were between three and four years of age; he had to lay aside his work for three weeks, and, on resuming it, could not tell to which child the respective likeness he had in hand belonged. The mistakes become less numerous on the part of the mother during the boyhood and girlhood of the twins, but are almost as frequent as before on the part of strangers. I have many instances of tutors being unable to distinguish their twin pupils. Two girls used regularly to impose on their music teacher when one of them wanted a whole holiday; they had their lessons at separate hours, and the one girl sacrificed herself to receive two lessons on the same day, while the other one enjoyed herself from morning to evening. Here is a brief and comprehensive account: 'Exactly alike in all, their schoolmasters could never tell them apart; at dancing parties they constantly changed partners without discovery; their close resemblance is scarcely diminished by age.'

[Illustration: FOUR BABY GIRLS AT ONCE

FIG. 1.--These quadruplet daughters were born to Mr. and Mrs. F. M. Keys, Hollis, Okla., on July 4, 1915, and were seven months old when the photograph was taken. Up to that time they had never had any other nourishment than their mother's milk. Their weights at birth were as follows (reading from left to right): Roberta, 4 pounds; Mona, 4-1/2 pounds; Mary, 4-1/4 pounds; Leota, 3-3/4 pounds. When photographed, Roberta weighed 16 pounds and each of the others weighed 16-1/4. Their aunt vouches for the fact that the care of the four is less trouble than a single baby often makes. The mother has had no previous plural births, although she has borne four children prior to these. Her own mother had but two children, a son and a daughter, and there is no record of twins on the mother's side. The father of the quadruplets is one of twelve children, among whom is one pair of twins. It is known that twinning is largely due to inheritance, and it would seem that the appearance of these quadruplets is due to the hereditary influence of the father rather than the mother. If this is the case, then the four girls must all have come from one egg-cell, which split up at an early stage. Note the uniform shape of the mouth, and the ears, set unusually low on the head.]

"The following is a typical schoolboy anecdote:

"Two twins were fond of playing tricks, and complaints were frequently made; but the boys would never own which was the guilty one, and the

complainants were never certain which of the two it was. One head master used to say he would never flog the innocent for the guilty, and the other used to flog them both.'

"No less than nine anecdotes have reached me of a twin seeing his or her reflection in the looking-glass, and addressing it in the belief that it was the other twin in person.

"Children are usually quick in distinguishing between their parent and his or her twin; but I have two cases to the contrary. Thus, the daughter of a twin says:

"Such was the marvelous similarity of their features, voice, manner, etc., that I remember, as a child, being very much puzzled, and I think, had my aunt lived much with us, I should have ended by thinking I had two mothers!"

"In the other case, a father who was a twin, remarks of himself and his brother:

"We were extremely alike, and are so at this moment, so much so that our children up to five and six years old did not know us apart.'

"Among my thirty-five detailed cases of close similarity, there are no less than seven in which both twins suffered from some special ailment or had some exceptional peculiarity. Both twins are apt to sicken at the same time in no less than nine out of the thirty-five cases. Either their illnesses, to which I refer, were non-contagious, or, if contagious, the twins caught them simultaneously; they did not catch them the one from the other."

Similarity in association of ideas, in tastes and habits was equally close. In short, their resemblances were not superficial, but extremely intimate, both in mind and body, while they were young; they were reared almost exactly alike up to their early manhood and womanhood.

Then they separated into different walks of life. Did this change of the environment alter their inborn character? For the detailed evidence, one should consult Galton's own account; we give only his conclusions:

In many cases the resemblance of body and mind continued unaltered up to old age, notwithstanding very different conditions of life; in others a severe disease was sufficient to account for some change noticed. Other dissimilarity that developed, Galton had reason to believe, was due to the development of inborn characters that appeared late in life. He therefore felt justified in broadly concluding "that the only circumstance, within the range of those by which persons of similar conditions of life are affected, that is capable of producing a marked effect on the character of adults, is illness or some accident which causes physical infirmity. The twins who closely resembled each other in childhood and early youth, and were reared under not very dissimilar conditions, either grow unlike through the development of natural [that is, inherited] characteristics which had lain dormant at first, or else they continue their lives, keeping time like two watches, hardly to be thrown out of accord except by some physical jar."

Here was a distinct failure of nurture to modify the inborn nature. We

next consider the ordinary twins who were unlike from the start. Galton had twenty such cases, given with much detail. "It is a fact," he observes, "that extreme dissimilarity, such as existed between Jacob and Esau, is a no less marked peculiarity of twins of the same sex than extreme similarity." The character of the evidence as a whole may be fairly conveyed by a few quotations:

(1) One parent says: "They have had _exactly the same nurture_ from their birth up to the present time; they are both perfectly healthy and strong, yet they are otherwise as dissimilar as two boys could be, physically, mentally, and in their emotional nature."

(2) "I can answer most decidedly that the twins have been perfectly dissimilar in character, habits, and likeness from the moment of their birth to the present time, though they were nursed by the same woman, went to school together, and were never separated until the age of thirteen."

(3) "They have never been separated, never the least differently treated in food, clothing, or education; both teething at the same time, both had measles, whooping cough, and scarlatina at the same time, and neither has had any other serious illness. Both are and have been exceedingly healthy, and have good abilities; yet they differ as much from each other in mental cast as any one of my family differs from another."

(4) "Very dissimilar in mind and body; the one is quiet, retiring, and slow but sure; good-tempered, but disposed to be sulky when provoked;--the other is quick, vivacious, forward, acquiring easily and forgetting soon; quick-tempered and choleric, but quickly forgiving and forgetting. They have been educated together and never separated."

(5) "They were never alike either in mind or body, and their dissimilarity increases daily. The external influences have been identical; they have never been separated."

(6) "The two sisters are very different in ability and disposition. The one is retiring, but firm and determined; she has no taste for music or drawing. The other is of an active, excitable temperament; she displays an unusual amount of quickness and talent, and is passionately fond of music and drawing. From infancy, they have been rarely separated even at school, and as children visiting their friends, they always went together."

And so on. Not a single case was found in which originally dissimilar characters became assimilated, although submitted to exactly the same influences. Reviewing the evidence in his usual cautious way, Galton declared, "There is no escape from the conclusion that nature prevails enormously over nurture, when the differences of nurture do not exceed what is commonly to be found among persons of the same rank in society and in the same country."

This kind of evidence was a good start for eugenics but as the science grew, it outgrew such evidence. It no longer wanted to be told, no matter how minute the details, that "nature prevails enormously over nurture." It wanted to know exactly how much. It refused to be satisfied with the statement that a certain quantity was large; it demanded that it be measured or weighed. So Galton, Karl Pearson and other

mathematicians devised means of doing this, and then Professor Edward L. Thorndike of Columbia University took up Galton's problem again, with more refined methods.

The tool used by Professor Thorndike was the coefficient of correlation, which shows the amount of resemblance or association between any two things that are capable of measurement, and is expressed in the form of a decimal fraction somewhere between 0 and the unit 1. Zero shows that there is no constant resemblance at all between the two things concerned,--that they are wholly independent of each other, while 1 shows that they are completely dependent on each other, a condition that rarely exists, of course.[4] For instance, the correlation between the right and left femur in man's legs is .98.

Professor Thorndike found in the New York City schools fifty pairs of twins of about the same age and measured the closeness of their resemblance in eight physical characters, and also in six mental characters, the latter being measured by the proficiency with which the subjects performed various tests. Then children of the same age and sex, picked at random from the same schools, were measured in the same way. It was thus possible to tell how much more alike twins were than ordinary children in the same environment.[5]

[Illustration: THE EFFECT OF NURTURE IN CHANGING NATURE

FIG. 2.--Corn of a single variety (Leaming Dent) grown in two plots: at the left spaced far apart in hills, at the right crowded. The former grows to its full potential height, the latter is stunted. The size differences in the two plots are due to differences in environment, the heredity in both cases being the same. Plants are much more susceptible to nutritional influences on size than are mammals, but to a less degree nutrition has a similar effect on man. Photograph from A. F. Blakeslee.]

"If now these resemblances are due to the fact that the two members of any twin pair are treated alike at home, have the same parental models, attend the same school and are subject in general to closely similar environmental conditions, then (1) twins should, up to the age of leaving home, grow more and more alike, and in our measurements the twins 13 and 14 years old should be much more alike than those 9 and 10 years old. Again (2) if similarity in training is the cause of similarity in mental traits, ordinary fraternal pairs not over four or five years apart in age should show a resemblance somewhat nearly as great as twin pairs, for the home and school condition of a pair of the former will not be much less similar than those of a pair of the latter. Again, (3) if training is the cause, twins should show greater resemblance in the case of traits much subject to training, such as ability in addition or multiplication, than in traits less subject to training, such as quickness in marking off the A's on a sheet of printed capitals, or in writing the opposites of words."

The data were elaborately analyzed from many points of view. They showed (1) that the twins 12-14 years old were not any more alike than the twins 9-11 years old, although they ought to have been, if environment has great power to mold the character during these so-called "plastic years of childhood." They showed (2) that the resemblance between twins was two or three times as great as between ordinary children of the same

age and sex, brought up under similar environment. There seems to be no reason, except heredity, why twins should be more alike. The data showed (3) that the twins were no more alike in traits subject to much training than in traits subject to little or no training. Their achievement in these traits was determined by their heredity; training did not measurably alter these hereditary potentialities.

"The facts," Professor Thorndike wrote, "are easily, simply and completely explained by one simple hypothesis; namely, that the nature of the germ-cells--the conditions of conception--cause whatever similarities and differences exist in the original natures of men, that these conditions influence mind and body equally, and that in life the differences in modification of mind and body produced by such differences as obtain between the environments of present-day New York City public school children are slight."

"The inferences," he says, "with respect to the enormous importance of original nature in determining the behavior and achievements of any man in comparison with his fellows of the same period of civilization and conditions of life are obvious. All theories of human life must accept as a first principle the fact that human beings at birth differ enormously in mental capacities and that these differences are largely due to similar differences in their ancestry. All attempts to change human nature must accept as their most important condition the limits set by original nature to each individual."

Meantime other investigators, principally followers of Karl Pearson in England, were working out correlation coefficients in other lines of research for hundreds of different traits. As we show in more detail in Chapter IV, it was found, no matter what physical or mental trait was measured, that the coefficient of correlation between parent and child was a little less than .5 and that the coefficient between brother and brother, or sister and sister, or brother and sister, was a little more than .5. On the average of many cases the mean "nature" value, the coefficient of direct heredity, was placed at .51. This gave another means of measuring nurture, for it was also possible to measure the relation between any trait in the child and some factor in the environment. A specific instance will make this clearer.

Groups of school children usually show an appalling percentage of short-sightedness. Now suppose it is suggested that this is because they are allowed to learn to read at too early an age. One can find out the age at which any given child did learn to read, and work out the coefficient of correlation between this age and the child's amount of myopia. If the relation between them is very close--say .7 or .8--it will be evident that the earlier a child learns to read, the more short-sighted he is as he grows older. This will not prove a relation of cause and effect, but it will at least create a great suspicion. If on the contrary the correlation is very slight, it will be evident that early reading has little to do with the prevalence of defective vision among school children. If investigators similarly work out all the other correlations that can be suggested, finding whether there is any regular relation between myopia and overcrowding, long hours of study, general economic conditions at home, general physical or moral conditions of parents, the time the child spends out of doors, etc., and if no important relation is found between these various factors and myopia, it will be evident that no factor of the environment which one

can think of as likely to cause the trouble really accounts for the poor eyesight of school children.

[Illustration: HEIGHT IN CORN AND MEN

FIG. 3.--An unusually short and an unusually tall man, photographed beside extreme varieties of corn which, like the men, owe their differences in height indisputably to heredity rather than to environment. No imaginable environmental differences could reverse the positions of these two men, or of these two varieties of corn, the heredity in each case being what it is. The large one might be stunted, but the small one could not be made much larger. Photograph from A. F. Blakeslee.]

This has actually been done,[6] and none of the conditions enumerated has been found to be closely related to myopia in school children. Correlations between fifteen environmental conditions and the goodness of children's eyesight were measured, and only in one case was the correlation as high as .1. The mean of these correlations was about .04--an absolutely negligible quantity when compared with the common heredity coefficient of .51.

Does this prove that the myopia is rather due to heredity? It would, by a process of exclusion, if every conceivable environmental factor had been measured and found wanting. That point in the investigation can never be reached, but a tremendously strong suspicion is at least justified. Now if the degree of resemblance between the prevalence of myopia in parents and that in children be directly measured, and if it be found that when the parent has eye trouble the child also has it, then it seems that a general knowledge of heredity should lead to the belief that the difficulty lies there, and that an environmental cause for the poor vision of the school child was being sought, when it was all the time due almost entirely to heredity. This final step has not yet been completed in an adequate way,[7] but the evidence, partly analogical, gives every reason to believe in the soundness of the conclusion stated, that in most cases the schoolboy must wear glasses because of his heredity, not because of overstudy or any neglect on the part of his parents to care for his eyes properly during his childhood.

[Illustration: WHY MEN GROW SHORT OR TALL

FIG. 4.--Pedigree charts of the two men shown in the preceding illustration. Squares represent men and circles women; figures underlined denote measurement in stocking feet. It is obvious from a comparison of the ancestry of the two men that the short one comes from a predominantly short family, while the tall one gains his height likewise from heredity. The shortest individual in the right-hand chart would have been accounted tall in the family represented on the left. After A. F. Blakeslee.]

The extent to which the intelligence of school children is dependent on defective physique and unfavorable home environment is an important practical question, which David Heron of London attacked by the methods we have outlined. He wanted to find out whether the healthy children were the most intelligent. One is constantly hearing stories of how the intelligence of school children has been improved by some treatment which improved their general health, but these stories are rarely

presented in such a way as to contribute evidence of scientific value. It was desirable to know what exact measurement would show. The intelligence of all the children in fourteen schools was measured in its correlation with weight and height, conditions of clothing and teeth, state of nutrition, cleanliness, good hearing, and the condition of the cervical glands, tonsils and adenoids. It could not be found that mental capacity was closely related to any of the characters dealt with.[8] The particular set of characters measured was taken because it happened to be furnished by data collected for another purpose; the various items are suggestive rather than directly conclusive. Here again, the correlation in most cases was less than .1, as compared with the general heredity correlation of .5.

The investigation need not be limited to problems of bad breeding. Eugenics, as its name shows, is primarily interested in "good breeding;" it is particularly worth while, therefore, to examine the relations between heredity and environment in the production of mental and moral superiority.

If success in life--the kind of success that is due to great mental and moral superiority--is due to the opportunities a man has, then it ought to be pretty evenly distributed among all persons who have had favorable opportunities, provided a large enough number of persons be taken to allow the laws of probability full play. England offers a good field to investigate this point, because Oxford and Cambridge, her two great universities, turn out most of the eminent men of the country, or at least have done so until recently. If nothing more is necessary to ensure a youth's success than to give him a first-class education and the chance to associate with superior people, then the prizes of life ought to be pretty evenly distributed among the graduates of the two universities, during a period of a century or two.

This is not the case. When we look at the history of England, as Galton did nearly half a century ago, we find success in life to an unexpected degree a family affair. The distinguished father is likely to have a distinguished son, while the son of two "nobodies" has a very small chance of becoming distinguished. To cite one concrete case, Galton found[9] that the son of a distinguished judge had about one chance in four of becoming himself distinguished, while the son of a man picked out at random from the population had about one chance in 4,000 of becoming similarly distinguished.

The objection at once occurs that perhaps social opportunities might play the predominant part; that the son of an obscure man never gets a chance, while the son of the prominent man is pushed forward regardless of his inherent abilities. This, as Galton argued at length, can not be true of men of really eminent attainments. The true genius, he thought, frequently succeeds in rising despite great obstacles, while no amount of family pull will succeed in making a mediocrity into a genius, although it may land him in some high and very comfortable official position. Galton found a good illustration in the papacy, where during many centuries it was the custom for a pope to adopt one of his nephews as a son, and push him forward in every way. If opportunity were all that is required, these adopted sons ought to have reached eminence as often as a real son would have done; but statistics show that they reached eminence only as often as would be expected for nephews of great men, whose chance is notably less, of course, than that of sons of great

men, in whom the intensity of heredity is much greater.

Transfer the inquiry to America, and it becomes even more conclusive, for this is supposed to be the country of equal opportunities, where it is a popular tradition that every boy has a chance to become president. Success may be in some degree a family affair in caste-ridden England; is it possible that the past history of the United States should show the same state of affairs?

Galton found that about half of the great men of England had distinguished close relatives. If the great men of America have fewer distinguished close relatives, environment will be able to make out a plausible case: it will be evident that in this continent of boundless opportunities the boy with ambition and energy gets to the top, and that this ambition and energy do not depend on the kind of family he comes from.

Frederick Adams Woods has made precisely this investigation.[10] The first step was to find out how many eminent men there are in American history. Biographical dictionaries list about 3,500, and this number provides a sufficiently unbiased standard from which to work. Now, Dr. Woods says, if we suppose the average person to have as many as twenty close relatives--as near as an uncle or a grandson--then computation shows that only one person in 500 in the United States has a chance to be a near relative of one of the 3,500 eminent men--provided it is purely a matter of chance. As a fact, the 3,500 eminent men listed by the biographical dictionaries are related to each other not as one in 500, but as one in five. If the more celebrated men alone be considered, it is found that the percentage increases so that about one in three of them has a close relative who is also distinguished. This ratio increases to more than one in two when the families of the forty-six Americans in the Hall of Fame are made the basis of study. If all the eminent relations of those in the Hall of Fame are counted, they average more than one apiece. Therefore, they are from five hundred to a thousand times as much related to distinguished people as the ordinary mortal is.

To look at it from another point of view, something like 1% of the population of the country is as likely to produce a man of genius as is all the rest of the population put together,--the other 99%.

This might still be due in some degree to family influence, to the prestige of a famous name, or to educational advantages afforded the sons of successful men. Dr. Woods' study of the royal families of Europe is more decisive.[11]

In the latter group, the environment must be admitted--on the whole--to be uniformly favorable. It has varied, naturally, in each case, but speaking broadly it is certain that all the members of this group have had the advantage of a good education, of unusual care and attention. If such things affect achievement, then the achievements of this class ought to be pretty generally distributed among the whole class. If opportunity is the cause of a man's success, then most of the members of this class ought to have succeeded, because to every one of royal blood, the door of opportunity usually stands open. One would expect the heir to the throne to show a better record than his younger brothers, however, because his opportunity to distinguish himself is naturally

greater. This last point will be discussed first.

Dr. Woods divided all the individuals in his study into ten classes for intellectuality and ten for morality, those most deficient in the qualities being put in class 1, while the men and women of preëminent intellectual and moral worth were put in class 10. Now if preëminent intellect and morality were at all linked with the better chances that an inheritor of succession has, then heirs to the throne ought to be more plentiful in the higher grades than in the lower. Actual count shows this not to be the case. A slightly larger percentage of inheritors is rather to be found in the lower grades. The younger sons have made just as good a showing as the sons who succeeded to power; as one would expect if intellect and morality are due largely to heredity, but as one would not expect if intellect and morality are due largely to outward circumstances.

Are "conditions of turmoil, stress and adversity" strong forces in the production of great men, as has often been claimed? There is no evidence from facts to support that view. In the case of a few great commanders, the times seemed particularly favorable. Napoleon, for example, could hardly have been Napoleon had it not been for the French revolution. But in general there have been wars going on during the whole period of modern European history; there have always been opportunities for a royal hero to make his appearance; but often the country has called for many years in vain. Circumstances were powerless to produce a great man and the nation had to wait until heredity produced him. Spain has for several centuries been calling for genius in leadership in some lines; but in vain. England could not get an able man from the Stuart line, despite her need, and had to wait for William of Orange, who was a descendant of a man of genius, William the Silent. "Italy had to wait fifty years in bondage for her deliverers, Cavour, Garibaldi and Victor Emmanuel."

"The upshot of it all," Dr. Woods decides, "is that, as regards intellectual life, environment is a totally inadequate explanation. If it explains certain characters in certain instances, it always fails to explain many more, while heredity not only explains all, or at least 90%, of the intellectual side of character in practically every instance, but does so best when questions of environment are left out of discussion."

Despite the good environment almost uniformly present, the geniuses in royalty are not scattered over the surface of the pedigree chart, but form isolated little groups of closely related individuals. One centers in Frederick the Great, another in Queen Isabella of Spain, a third in William the Silent, and a fourth in Gustavus Adolphus. Furthermore, the royal personages who are conspicuously low in intellect and morality are similarly grouped. Careful study of the circumstances shows nothing in the environment that would produce this grouping of genius, while it is exactly what a knowledge of heredity leads one to expect.

In the next place, do the superior members of royalty have proportionately more superior individuals among their close relatives, as was found to be the case among the Americans in the Hall of Fame? A count shows at once that they do. The first six grades all have about an equal number of eminent relatives, but grade 7 has more while grade 8 has more than grade 7, and the geniuses of grade 10 have the highest

proportion of nearer relatives of their own character. Surely it cannot be supposed that a relative of a king in grade 8 has on the average a much less favorable environment than a relative of a king in grade 10. Is it not fair, then, to assume that this relative's greater endowment in the latter case is due to heredity?

Conditions are the same, whether males or females be considered. The royal families of Europe offer a test case because for them the environment is nearly uniformly favorable. A study of them shows great mental and moral differences between them, and critical evidence indicates that these differences are largely due to differences in heredity. Differences of opportunity do not appear to be largely responsible for the achievements of the individuals.

But, it is sometimes objected, opportunity certainly is responsible for the appearance of much talent that would otherwise never appear. Take the great increase in the number of scientific men in Germany during the last half century, for example. It can not be pretended that this is due to an increased birth-rate of such talent; it means that the growth of an appreciation of scientific work has produced an increased amount of scientific talent. J. McKeen Cattell has argued this point most carefully in his study of the families of one thousand American men of science (*Popular Science Monthly*, May, 1915). "A Darwin born in China in 1809," he says, "could not have become a Darwin, nor could a Lincoln born here on the same day have become a Lincoln had there been no Civil War. If the two infants had been exchanged there would have been no Darwin in America and no Lincoln in England." And so he continues, urging that in the production of scientific men, at least, education is more important than eugenics.

This line of argument contains a great deal of obvious truth, but is subject to a somewhat obvious objection, if it is pushed too far. It is certainly true that the exact field in which a man's activities will find play is largely determined by his surroundings and education. Young men in the United States are now becoming lawyers or men of science, who would have become ministers had they been born a century or two ago. But this environmental influence seems to us a minor one, for the man who is highly gifted in some one line is usually, as all the work of differential psychology shows, gifted more than the average in many other lines. Opportunity decides in just what field his life work shall lie; but he would be able to make a success in a number of fields. Darwin born in America would probably not have become the Darwin we know, but it is not to be supposed that he would have died a "mute, inglorious Milton": it is not likely that he would have failed to make his mark in some line of human activity. Dr. Cattell's argument, then, while admissible, can not properly be urged against the fact that ability is mainly dependent on inheritance.

We need not stop with the conclusion that equality of training or opportunity is unable to level the inborn differences between men. We can go even farther, and produce evidence to show that equality of training increases the differences in results achieved.

This evidence is obtained by measuring the effects of equal amounts of exercise of a function upon individual differences in respect to efficiency in it. Suppose one should pick out, at random, eight children, and let them do problems in multiplication for 10 minutes.

After a number of such trials, the three best might average 39 correct solutions in the 10 minutes, and the three poorest might average 25 examples. Then let them continue the work, until each one of them has done 700 examples. Here is equality in training; does it lead to uniform results?

Dr. Starch made the actual test which we have outlined and found that the three best pupils gained on the average 45 in the course of doing 700 examples; while the three poorest gained only 26 in the same course of time.

Similar tests have been made of school children in a number of instances, and have shown that equality of training fails to bring about equality of performance. All improve to some extent; but those who are naturally better than their comrades usually become better still, when conditions for all are the same. E. L. Thorndike gives[12] the following tabular statement of a test he conducted:

THE EFFECT OF EQUAL AMOUNTS OF PRACTICE UPON INDIVIDUAL DIFFERENCES IN THE MENTAL MULTIPLICATION OF A THREE-PLACE BY A THREE-PLACE NUMBER

		Amount done per unit of time				Percentage of correct figures in answers			
		Hours of Practice							
		First 5 Examples				First 5 Examples			
		Last 5 or 10 Examples				Last 5 or 10 Examples			
		Gain				Gain			
Initial highest five individuals		5.1	85	147	61	70	78	18	
"	next five "	5.1	56	107	51	68	78	10	
"	" six "	5.3	46	68	22	74	82	8	
"	" six "	5.4	38	46	8	58	70	12	
"	" five "	5.2	31	57	26	47	67	20	
"	" one individual	5.2	19	32	13	100	82	-18	

Similar results have been obtained by half a dozen other experimenters, using the tests of mental multiplication, addition, marking A's on a printed sheet of capitals, and the like. It would be a mistake to conclude too much from experiments of such restricted scope; but they all agree in showing that if every child were given an equal training, the differences in these traits would nevertheless be very great.

And although we do not wish to strain the application of these results too far, we are at least justified in saying that they strongly indicate that inborn mediocrity can not be made into a high grade of talent by training. Not every boy has a chance to distinguish himself, even if he receives a good education.

We are driven back to the same old conclusion, that it is primarily

inborn nature which causes the achievements of men and women to be what they are. Good environment, opportunity, training, will give good heredity a chance to express itself; but they can not produce greatness from bad heredity.

These conclusions are familiar to scientific sociologists, but they have not yet had the influence on social service and practical attempts at reform which they deserve. Many popular writers continue to confuse cause and effect, as for example H. Addington Bruce, who contributed an article to the _Century Magazine_, not long ago, on "The Boy Who Goes Wrong." After alleging that the boy who goes wrong does so because he is not properly brought up, Mr. Bruce quotes with approval the following passage from Paul Dubois, "the eminent Swiss physician and philosopher:

"If you have the happiness to be a well-living man, take care not to attribute the credit of it to yourself. Remember the favorable conditions in which you have lived, surrounded by the relatives who loved you and set you a good example; do not forget the close friends who have taken you by the hand and led you away from the quagmires of evil; keep a grateful remembrance for all the teachers who have influenced you, the kind and intelligent school-master, the devoted pastor; realize all these multiple influences which have made you what you are. Then you will remember that such and such a culprit has not in his sad life met with these favorable conditions; that he had a drunken father or a foolish mother, and that he has lived without affection, exposed to all kinds of temptation. You will then take pity upon this disinherited man, whose mind has been nourished upon malformed mental images, begetting evil sentiments such as immoderate desire or social hatred."

Mr. Bruce indorses this kind of talk when he concludes, "The blame for the boy who goes wrong does not rest with the boy himself, or yet with his remote ancestors. It rests squarely with the parents who, through ignorance or neglect, have failed to mold him aright in the plastic days of childhood."

Where is the evidence of the existence of these plastic days of childhood? If they exist, why do not ordinary brothers become as much alike as identical twins? How long are we to be asked to believe, on blind faith, that the child is putty, of which the educator can make either mediocrity or genius, depending on his skill? What does the environmentalist _know_ about these "plastic days"? If a boy has a drunken father or foolish mother, does it not suggest that there is something wrong with his pedigree? With such an ancestry, we do not expect him to turn out brilliantly, no matter in what home he is brought up. If a boy has the kind of parents who bring him up well; if he is, as Dr. Dubois says, surrounded by relatives who love him and set him a good example, we at once have ground for a suspicion that he comes of a pretty good family, a stock characterized by a high standard of intellectuality and morality, and it would surprise us if such a boy did not turn out well. But he turns out well because what's bred in the bone will show in him, if it gets any kind of a chance. It is his nature, not his nurture, that is mainly responsible for his character.

THE WORSHIP OF NATURE.

The Project Gutenberg EBook of *Birds and Nature*, Vol. VIII, No. 2,
September 1900, by Various

The ocean looketh up to heaven
As 'twere a living thing;
The homage of its waves is given
In ceaseless worshipping.

They kneel upon the sloping sand,
As bends the human knee,
A beautiful and tireless band,
The priesthood of the sea!

They pour the glittering treasures out
Which in the deep have birth,
And chant their awful hymns about
The watching hills of earth.

The green earth sends its incense up
From every mountain-shrine,
From every flower and dewy cup
That greeteth the sunshine.

The mists are lifted from the rills,
Like the white wing of prayer:
They lean above the ancient hills
As doing homage there.

The forest-tops are lowly cast
O'er breezy hill and glen,
As if a prayerful spirit pass'd
On nature as on men.

The clouds weep o'er the fallen world,
E'en as repentant love;
Ere, to the blessed breeze unfurl'd,
They fade in light above.

The sky is as a temple's arch,
The blue and wavy air
Is glorious with the spirit-march
Of messengers at prayer.

The gentle moon, the kindling sun,
The many stars are given,
As shrines to burn earth's incense on,
The altar-fires of Heaven!

John Greenleaf Whittier.

THE SUMMONS OF THE NORTH

Project Gutenberg's *The Haunters of the Silences*, by Charles G. D. Roberts

I

In the mystic gloom and the incalculable cold of the long Arctic night, when Death seemed the only inhabitant of the limitless vasts of ice and snow, the white bear cub was born. Over the desolate expanses swept the awful polar wind, now thick with fine, crystalline snow which volleyed and whirled and bit like points of steel, now glassy clear, so that the great, unwavering Arctic stars could preside unobscured over its destructive fury. When the wind was still, not less awful than the wind had been was the stillness, in which the unspeakable cold wrought secretly its will upon the abandoned world. Sometimes the implacable starlight would pale suddenly, and the lovely, sinister, spectral flames of the aurora, electric blue, and violet, and thin, elusive red, would go dancing in terrible silence across the arch of sky.

But the white cub--contrary to the custom of her kind his mother had borne but the one, instead of two--felt nothing of the cold and the unutterable desolation, saw nothing of the unchanging night, the implacable stars, the heatless and mirthless dancing flames. In a lair between two rocks, under seven or eight feet of snow, he lay snuggled against the warm, furry body of his mother, safe hidden from the world of night and cold. The mother, whose hot breathing kept open a little arched hollow in the sheltering snow, spent practically all her time in sleep, the ample layers of fat which the previous summer had stored upon her ribs supplying food and fuel to her giant frame. The cub, too, slept away most of the long unvarying hours, waking to nurse from time to time, and growing with marvellous rapidity on the inexhaustible nourishment which his mother's milk supplied.

Month followed month, as the night dragged slowly on toward spring and dawn; and still the mother slept, growing thinner day by day; and still the cub slept, and grew, and slept, day by day waxing fatter, and larger, and stronger for the great and terrible battle of life which awaited him beyond the threshold of the snow.

Except for the vast alternations of storm and calm, of starlight and auroral radiance, there was nothing to happen in that empty and frozen world. Such life as dared the cold and dark in those regions kept along the edges of the sea, where the great waters kept air-holes open through the incumbent ice. Thither frequented the walrus and the seals, and there hunted stealthily the savage old he-bears, who were too restless to yield themselves to the long winter sleep. But the wise mother had wandered far into the inland solitudes before retiring for her winter of sleep and motherhood. Over the place of that safe sleep and secret motherhood no live thing passed, all winter long,--save once or twice a small white fox, who sniffed cautiously at a faint, menacing scent which stole up through the hard snow, and once or twice the wide, soundless wings of a great white Arctic owl, winnowing southward to find the vanished ptarmigan.

Late and lagging came the beginnings of the dawn,--and then, much later, when dawn had grown into the long day, the beginnings of the Arctic

spring. Something called to the heart of the old she-bear, and she heard in the deep of her lair. Bursting through the softening and decaying snow, she led her sturdy cub forth into the white outer solitudes, and turned her steps eastward toward the seashore. She was gaunt, loose-pelted, and unspeakably hungry; but she went slowly, while the cub learned the new and interesting business of using his legs.

Along the shore the massive ice was still unbroken for miles out; but where the currents and tides and storms had begun to vanquish it, and the steel blue waves were eating into it hour by hour beneath the growing sunlight, there the life of the north was gathering. Sea-birds clamoured, and mated, and dived, and flew in circles, or settled in flickering gray and white masses on every jutting promontory of black rock. Along the blue-white ice-edge seals basked and barked, their soft eyes keeping incessant watch against the perils that always lurked about them. Huge bulks of walrus wallowed heavily in the waves, or lifted their tusked heads menacingly to stare over the ice.

[Illustration: "SOME INEXPERIENCED SEAL HAD BEEN FOOLISH ENOUGH TO LIE BASKING CLOSE BESIDE AN ICE-CAKE"]

Amid this teeming life, which the returning sun had brought back to the ice-fields, the old she-bear, with her cub close at her heels, moved craftily. She lurked behind piled-up ice-cakes, crept from shelter to shelter, and moved as noiselessly as a wraith of snow on the hair-tufted pads of her great feet. Sometimes her tireless hunting was promptly rewarded, particularly when some inexperienced seal had been foolish enough to lie basking close beside an ice-cake large enough to give cover to the cunning hunter. Sometimes her sudden rush would take unawares a full-fed gannet half-dozing on a rocky ledge. Sometimes a lightning plunge and sweep of her armed paw would land a gleaming fish upon the ice, a pleasant variation to the diet of red-blooded seal-meat. And presently, as the long sunlight gathered warmth, and the brief, swift heat of the Arctic summer approached, rushing down upon the ice as if it knew how short must be its reign, the melting of the snow on sheltered slopes and southward-facing hollows uncovered a wealth of mosses, and lichens, and sprouting roots, most grateful to the bears' flesh-wearied palates.

But not always was foraging a matter so simple. The mother bear had two great appetites to supply, her own, and that of the vigorous youngster beside her, who kept draining unremittingly at her sources of vitality and strength. Sometimes the seals were unusually alert and shy, the birds vituperative and restless, and the fish obstinate in their preference for the waters far offshore. At such times, if there were no greening hollows near by, where she might make a bloodless banquet, the old bear would call to her aid those great powers of swimming which made her almost as much at home in the water as the seal itself. Marking some seals at rest by the edge of some far-jutting, naked ice-field, where there was no possibility of her creeping upon them unobserved, she would slip into the water in the seclusion of some little cove, and swim straight seaward, swimming so low that only the tip of her muzzle was to be seen. This moving speck upon the waters was not conspicuous even to the keenest and most suspicious eyes. It might pass for a fragment of ice with seaweed frozen into it, or for a bit of floating moss, save for the fact that it moved steadily through the dancing of the waves, paying no heed to tide or wind. As the seals were not expecting danger from the

direction of the sea, they were not inclined to scrutinize a thing so insignificant as that steadily moving speck among the waves. Arriving within well calculated distance of the unsuspecting baskers on the ice-field, the old bear would fill her lungs, sink beneath the surface, and swim forward with all speed. At the very edge of the ice she would rise up, lunge forward, and strike down with her savage paw the nearest seal, before any of them had time to realize the direction from which death had burst upon them.

The old bear's triumph, however, was not always so complete. On one day in particular she was confronted by an experience which almost left her cub without a mother. The cub, watching solicitously from behind a jagged hummock of ice, received a lesson which never faded from his mind. He learned that in the wilds one must never let himself become so absorbed in any occupation as to forget to keep a watchful eye for what may be coming up behind one's back.

It was on one of the lean days, when all game was wide awake and the lichen-beds far away. On the jagged ice off the mouth of an inlet lay two walrus calves sunning their round, glistening sides while their mothers wallowed and snorted in the water beside them. The old bear eyed the calves hungrily for a minute or two. Then, ostentatiously turning her back upon the scene, she slouched off inland among the hummocks and rocks, the cub lurching along contentedly beside her.

Once hidden from the view of the walruses, she quickened her pace till the cub had to struggle to keep with her, swung around the head of the inlet, and crept stealthily down the other side toward the spot where the calves were lying. The wind blew softly from them, her padded feet made no sound, and she kept herself completely out of sight. Peering warily from behind a tilted ice-cake, she saw that one of the cows had crawled out of the water and lain down beside its calf for a noonday doze. Then she drew her head back, and continued her careful stalking by nose and ear alone.

At last she found herself within rushing distance. Not thirty yards away she could hear the loud breathing of the drowsy cow on the ice, the splashing of the one in the water. Turning upon the cub, she made him understand that he was to stay where he was till she was ready for him. Then gathering all the force of her muscles till she was like a great bow bent, she shot forth from her place of hiding and rushed upon the sleepers.

As the white shape of doom came down upon them without warning, the cow and one calf awoke in intuitive panic and with astonishing and instantaneous agility rolled off into the water. But the other calf was not in time. One sprawling struggle it made toward safety, and gave utterance to one hoarse bleat of despair, as if it knew that fate had overtaken it. Then a heavy stroke broke its neck; and as its clumsy legs spread out limp and unstrung upon the ice the bear clutched it and started to drag it back from the water's edge.

At this moment she was aware of a huge lumbering bulk crawling up upon the ice behind her. She took it for granted it was the dead calf's mother, and paid no heed. Walrus cows she despised as antagonists, though as game she held them in high consideration. She would attend to this one in a moment; and then her larder would be amply stocked for

days.

An instant later, however, if she had deigned to look back, she would have seen a gigantic gray and brown, warty-skinned bulk, surmounted by a hideous face and grim, perpendicular tusks, rearing itself on huge flippers just behind her. The cub, peering from his hiding-place, saw the peril but did not comprehend it. The next moment the bulk fell forward, crushing the bear's hind-quarters to the ice, while those long tusks, which, fortunately for her, had failed to strike directly, tore a great red gash across her right shoulder.

With a grunting squeal of rage and pain the bear writhed herself free of the dripping mass of her assailant, and turned upon him madly. Blow after blow she struck with that terrible fore paw of hers, armed with claws like steel chisels. But the hide of the giant walrus was like many thicknesses of seasoned leather for toughness; and though she drew blood in streams at every tearing stroke, she inflicted no disabling wound. His little, deep eyes red with fury, the bull rearing himself on his flippers and lunging forward with awkward but irresistible force, like a toppling mountain, seeking to crush his enemy and at the same time catch her under the terrific downward thrust of his tusks. As he fought he bellowed hoarsely, and panted with great windy, wheezy breaths, while the walrus cows swam slowly up and down by the edge of the ice, watching the struggle with their small, impassive eyes.

[Illustration: "SHE LED HIM FARTHER AND FARTHER ACROSS THE ICE."]

The old bear was lame and aching from that first crushing assault, and her hind-quarters felt almost useless. Nevertheless she was much too active for her clumsy adversary to succeed in catching her again at a disadvantage. As she yielded ground before his blundering charges she led him farther and farther across the ice, farther and farther from the element wherein he was at home and invincible. Had she been herself unhurt she would eventually have vanquished his ill-directed valour, wearing him out and at last reaching his throat. But now she found herself wearing out, with loss of blood and the anguish of her bruised hind-quarters. As soon as she realized that her strength was failing, and that presently she might fail to avoid one of her enemy's great sprawling rushes, she was seized with fear. What would become of the cub if she were killed? She wheeled swiftly, ran to where the cub stood waiting and whimpering, nosed him solicitously, and led him away through the blue and sparkling hummocks.

After this misadventure the mother bear did no more hunting for a week or two, but kept inland among the sunny valleys, and nursed her wounds, and fed on the young roots and tender herbage which sprouted hurriedly wherever the snow left bare a patch of earth. On such clean and blood-cooling diet her hurts speedily healed. Then with renewed vigour and a whetted craving for red flesh-food, she went back to her keen hunting of the seals. But the walruses she haughtily ignored.

The Arctic summer, meanwhile, with its perpetual sun, poured down upon the world in swift, delicious heat; and the desolate world began to laugh, with vivid greenery about the bubbling sources of the springs, and sudden fringes of bloom, yellow and pink, along the edges of the perpetual ice, and the painted fluttering of butterflies in every southward-sloping hollow where there was earth enough to hold the roots

of flowers. The little winged adventurers would sometimes flit abroad over the snow, questing perilously beyond the narrow confines of their home. These rash wanderers, as a rule, would fall chilled, and die on the snow before they could get back; and the cub, attracted by the flecks of gay colour on the expanse of gray-white barrenness, would run gleefully to snap them up and eat them.

[Illustration: "WOULD RUN GLEEFULLY TO SNAP THEM UP AND EAT THEM."]

Throughout the summer the cub and his mother kept very much to themselves, seldom consorting with the other bears which roamed the rocks and floes or came to the sunny valleys to feed on the ephemeral herbage. The cub, meanwhile, having all the nourishment and care that was usually divided between two, was growing swiftly in stature and in the lore of the north. With his mother's example before him he learned to hunt seals, to creep up on the dozing sea-birds, to scoop the unwary fish from the sea, to waylay the stupid hare or the wary fox. But he was peculiarly averse to swimming, and never entered the water except under the compulsion of his mother's firm paw. The wise old bear, knowing how much his success in the battle of life must depend on his mastery of the water, would push him in from time to time, and keep him there in spite of every whimpering protest. In this way he learned his needed lessons. But his preference was all for land hunting, and it was obvious that only the extreme of hunger would ever lead him to follow the seals in their own element. As a matter of fact, since that memorable day when his mother had been beaten by the great walrus, the cub had grown to regard the sea as the peculiar domain of the walruses, and he felt a certain diffidence about trespassing.

When the summer was beginning to fade away as hurriedly as it had come, the cub was suddenly left alone in his grim world. It happened in this way. On a certain hungry day, when his mother's hunting had been unsuccessful, the wind brought over a ridge of rock a pungent and ravishing smell of fresh blood. As cautiously as a cat the old bear crept around the ridge, the cub creeping at her heels. The sight that met them was one they had never seen before. Close at the water's edge three men were busy skinning and cutting up a couple of seals. The cub stopped short. A natural, inborn caution warned him that man was a dangerous animal. But the old bear, to whom man was as unknown as to her cub, had her intuitions obscured at that moment by her too eager appetite. Moreover, she was in a bad temper, and felt that the strangers were intruders upon her own hunting-ground. They were insignificant-looking intruders, too, any one of whom she felt that she could settle at a single stroke of her paw. A green gleam came into her eyes, as with narrow, snaky head thrust forward and jaws half-parted savagely, she stalked down upon the group, expecting to see it scatter at her approach and leave her in undisputed possession of the prey.

As she drew near the men stopped work, stood up, and stared at her. For a moment they did nothing. Then, seeing that she meant business, two of them stepped aside and picked up what looked to her like two long sticks, which glinted in the sun. One man took a stride forward and pointed the stick at her in a way which seemed like a challenge. With a grunt of anger she charged straight at him.

From the point of the stick burst a flash and a roar, with a little puff of blue smoke that drifted off like a ghost over the waves. It might

have been the ghost of the old bear herself, fading reluctantly back into the grim and desolate earth from which she had sprung; for at the instant of its appearing she plunged forward upon her nose and lay motionless, with a bullet through her brain.

It was a perfect shot; but the man who had made it took it as a matter of course. In a few moments the limp and warm body was being treated like that of the seal, for the pelt was a fine one and fresh bear-meat was a delicacy not to be despised by Arctic travellers. But the cub was not a witness of this red work of the shambles. When he saw his mother fall he shrank back in overwhelming terror behind the rocks, then turned and ran with all his might till he could run no longer. Finding himself in a little sheltered valley where he and his mother had often fed together on the sweet herbage, he crouched down under a rock and lay shivering for hours, afraid even to whimper.

At first the white cub suffered torments of loneliness and vague fear; but presently the more insistent torments of hunger gave him forgetfulness of his loss, and in hunting for his meals he gradually got himself adjusted to the new conditions. Naturally keen-witted and adaptable, he prospered, and when the approach of the long Arctic night began to throw its shadows over the ice and rocks his ribs were well covered with fat. When the herbage in the little valleys was all frozen to stone and sealed away under the first hard-driven snow, he yielded to a drowsiness which had been creeping into his nerves. With this drowsiness came a stirring of vague memory, and he turned his steps farther inland, far beyond the roar of waves and grinding floes, till he reached a place of tumbled rock, and cleft ravine, and imperishable ice. This was the place where he had been born; and here, in the very same sheltered crevice, he curled himself up for his winter's sleep. He was no more than fairly asleep, when the snow fell thick with the first of the unbroken night, and covered him away securely.

II

Through the months of dark, and storm, and ghostly, dancing lights, and immeasurable cold, the cub slept unstirring, and grew in his sleep. But when he woke, at the very first hint of awaking spring, he was wide awake all at once, and fiercely hungry. Fiercely he burst out from the sheltering snow, and shook himself, and hurried through the mystic glimmer of dawn to the seashore, where he hoped to find the seals.

He was trusting partly to memory, partly to instinct; but he did not know that this year he was a little ahead of the season. The ice inshore was still unbroken, and the journey to open water was leagues longer than he had anticipated. His cunning sharpened by his appetite, he stalked and killed an unwary seal beside its blow-hole, and lay there among the tumbled hummocks for some days, alternately eating and sleeping. Then, his strength and craft and self-reliance increasing hourly, he pressed forward league upon league, under the ethereal, bubble-tinted, lonely Arctic morning, seeking the open sea.

When, at last, he heard the waves breaking along the blue ice brink, and the clamour of the sea-fowl, and the barking of the seals, he felt that he had come home again. He forgot the solid land, here upon what seemed as solid as any land. He forgot the little inland valleys, where

presently the snow would be melting and the tender grasses beginning to sprout. Here was good hunting, and easy; and here he stayed, making his lair among the up-tilted ice-floes, till the yellow and blue glory of full day was pouring over the waste.

It happened that year that no storms came to shatter and eat away the ice-fields along their outer edges. Only the tides and the slow assault of the sun did their work; and presently a vast area of unbroken ice parted from the land and went drifting southward in the grip of the polar current.

For days the young bear was quite unaware of this accident. The ice-field was too vast and too solid for its motion to convey any warning. The sea-birds, of course, knew all about it; and in a few days they disappeared, requiring solid ground for their nesting business. As for the seals, if they knew they didn't care, holding the ice safer for their domestic arrangements than the perilous and hostile shore. The young bear found good hunting. No storms came to vex him. And the warmth of summer fairly rushed to meet him. For several weeks he was altogether content.

Meanwhile the sun and the sea were making inroads upon the strength of the ice-field. One day when the bear was prowling along its edges, a mass of perhaps a quarter-acre in area broke off, lurching on the long swell. Astonished and a little alarmed, the bear hurried across, swam the narrow but rapidly widening strait, and clambered out upon the main field. The incident in some way stirred up a latent instinct, and he became uneasy. Setting his pace northward and landward, he stalked straight ahead for hours,--and where he expected a familiar ridge of rocks he came upon open sea. Much disturbed, he kept on his vain search for land, forgetting to eat, and soon had circumnavigated his voyaging domain. There was no land anywhere to swim to. There was nothing to be done but accept the situation with such composure as he could command. The seals were still with him, and he was not compelled to go hungry.

Then came a storm, with blinding flurries of snow out of the north, and huge waves piling upon the weakened ice; and the field began to break up. The seals fled away from the turmoil. Frantic with terror, the bear was again and again overwhelmed among the warring floes, and only by sheer miracle of good luck escaped being crushed. Clever swimmer that he was, again and again he succeeded in crawling out upon a larger floe, ploughing its way more steadily through the tumult. But every such refuge went to pieces after a time, crumbling into chaos under the shocks of pounding wave and battering ice. At last, and not too soon, when his young courage was almost worn out and his young strength all but gone, he was so fortunate as to gain a particularly tough and massive floe which withstood all the storm's assaults. It was almost a young berg in its dimensions and solidity; and in its centre, crouched in a crevice, the bear felt, for the first time since the uproar began, something like a sense of security.

The drift of the current had by this time carried the ice so far south that the unchanging light of the Arctic day was left behind. Each night, for a little while, the sun dipped from sight below the naked horizon. For three days the great floe voyaged on through unrelenting storm, riding down the lesser ice-cakes, and taking the waves with ponderous lurch and slide. Little by little the lesser ice disappeared, till the

great floe rode alone. Then the wind died down; and last of all the waves subsided. And the bear found himself sailing a steel-blue, sparkling, empty sea, under a cloudless sky and a sun that burned with a warmth he had never known.

It was now came the terrific trial of hunger to the young bear. For days together he had no taste of food, no comfort to his throat but the licking of the ice and lapping of the fresh water in the pools. Once only did he taste meat,--a blundering gannet which alighted within a foot of his motionless head and never knew the lightning doom that smote it. This made one meal; but no more birds came, and no seals appeared, and no fish came near enough for the bear to have any hope of striking them. Day by day he grew thinner and weaker, till it was an effort to climb the slopes of icy domain; and day by day the floe diminished, till it grew to be a race between the ice and the animal, as to which should first fade back into the elements.

But here fate intervened to stop this unnatural rivalry. By this time the ice had drifted down into the track of occasional ships; and one day, as a tramp steamer was passing near the floe, some one on deck discerned the crouching bear. The sea was calm, and the captain in a mood of leisure; so a boat was lowered and the crew set out for a bear hunt.

Having heard much of the ferocity of the polar bear, the men went well armed and full of excitement. But the reception which they met disarmed them. Too hopeless for fear, or hate, or wonder, the despairing animal turned upon them a look of faint appeal which they could not misunderstand. With a not unnatural distrust of such amenability they lightly bound and muzzled him, and took him aboard ship. There the cook admitted him to his special favour, gave him a little warm broth, and gradually, by careful dieting, coaxed him back to health.

[Illustration: "SOME ONE ON DECK DISCERNED THE CROUCHING BEAR."]

The young bear, as soon as he recovered himself, became the admiration of the whole ship's company. His coat was rich and fine, its whiteness tinged with a faint golden dye. His teeth and claws were perfect, and in the small, inscrutable eyes with which he followed the business of the ship gleamed an unusual intelligence. Nevertheless, though he showed no ill-temper, no one, not even his kind attendant the cook, could penetrate his impregnable reserve. To each individual who approached him he showed complete indifference, while, on the contrary, his interest in whatever was going on seemed unfailing. Chained to an iron stanchion near the galley, he would stand swaying from side to side and swinging his narrow, snake-like head for hours. But nothing that took place, aloft or aloft, escaped his keen observation. His indifference was plainly not stupidity, so every one on the ship, from the captain down, regarded him with vast respect. When at length, after a quiet voyage, the ship reached port, this respect was enhanced by the price which he commanded from the directors of the zoological gardens.

Now began for the young bear a life which, after the first annoying novelty of it had worn off, almost broke his spirit by its cramped monotony. His iron cage was spacious,--for a cage,--and built under the shadow of a leaning rock; and a spring-fed pool at the base of the rock kept the heat of the southern summer from growing utterly intolerable.

But the staring, grinning crowds which passed endlessly before the bars of his cage filled him with weary rage; and day by day a fiercer homesickness clutched at his heart. The food which his keeper gave him he ate greedily enough, but through some inexplicable caprice he scorned the peanuts which the crowd kept throwing to him through the bars. He saw the other bears, in neighbouring cages, devour these small, dry things and beg for more; but he would have none of them. He was ceaselessly irritated, too, by the noisy sparrows which would flit impudently within a foot of his nose; and once in a while the stroke of his inescapable paw would descend upon one of them, easing for the moment his sense of injury. Such small trophies he would eat with a relish which the choicest of his jailers' gifts could not excite. The only moments when his homesick heart could even pretend to forget its longing for the desolate spaces, the lifeless rock ridges, the little, snow-rimmed flower valleys, and the call of the eternal ice, were when, in the solitary lilac-gray of dawn, he wallowed unobserved in his sweetly chilly pool, and dreamed that the barking of the seals from their tank across the garden was the authentic voice of his lost home. But the coming of the first drowsy attendants would shatter this illusion, and send him back under his rock to stand sullenly swaying and swinging his head all day.

In this way the summer dragged along, and then the fine, dry fall; and instead of becoming reconciled the young bear grew more moody. His appetite began to fail and his fine coat lose its live, elastic quality. The keepers were disappointed in him. At first they had expected to win him over easily, because of his apparent amenableness and that look of intelligence in his eyes. But now they gave him up as an irreconcilable, and set themselves to keep him from pining away.

When winter came with raw rains, and sleet, and some sharp frosts, the exile sniffed the air hopefully for a few days, then relapsed into a deeper gloom. Then came a flurry of snow. As the great flakes fell about him he grew wild with excitement, running with uplift head about his cage, plunging in and out of the pool, and rearing himself against the bars in a sort of play. While the flurry lasted he saw no one, and forgot to eat. But in a day this tender snow had vanished, and he found no sufficient consolation in the thin ice which came afterward to encrust the edges of his pool. He seemed to feel himself cheated in his dearest hopes, and grew more obstinately dejected than ever; till finally came days when nothing would persuade him from the deepest corner of his den. Some of the attendants thought this meant no more than the drowsiness which, in his own home, might precede the desire for hibernation. But one, more understanding of the wild kindreds than the rest, declared that it was the very disease of homesickness, and that the exile was eating his own heart out for desire of his frozen north.

The city of the young bear's exile was not so far south but that sometimes, once in a long while, it found itself in the track of a wandering northern blizzard. One day, with terrific suddenness, on the heels of a gusty thaw, such a blizzard came. In half an hour the pool was frozen and a fine snow was drifting in fierce whirls about the cage.

The unhappy bear lifted his head and looked forth from his den. But he was not going to let himself again be cheated. He had no faith in this alien storm; and turning his back upon it, he once more buried his nose between his paws.

Meanwhile the cold deepened swiftly; the wind grew savage and shrieked over the cages and the roofs; and the snow, dry and hard like the driven needles of the Arctic night, thickened so that one could not see ten paces before his nose. Through the throbbing drift the attendants went hurrying about the open cages, fixing shelter for the animals that needed it. The cold, the savage noises of the wind, the sharp buffets of snow that struck into his den, at last brought the bear to his feet. He turned slowly, and came out into the storm.

He found himself, now, actually alone, and in what seemed almost his own world. This storm was convincing. He could not refuse to believe in the icy driven crystals which cut so deliciously upon his tongue and against his open jaws. This was really snow, that whirled and heaped about him. This was really ice, which crashed about him as he plunged in and out of his pool. Around and around his cage he romped, biting the snow in ecstasy, rolling in it, breathing it, whimpering to it. When his keeper came and looked in at him with wonder, and spoke to him with sympathetic comprehension, he neither saw nor heard. To his eyes the storm was volleying over the illimitable fields of the ice. In his ears the raving of the wind held the crash of grinding floes. To his heart it was the summons of the north,--and suddenly his heart answered. He stood still, with a strange bewilderment in his eyes, as if transfixed by some kind of tremendous shock. Then he swayed on his legs; and sank in a lifeless heap by the drifted brink of his pool.

WHAT IS NATURE-STUDY?^[1]

BY L. H. BAILEY.

The Project Gutenberg EBook of *Cornell Nature-Study Leaflets*, by Various
1904

[1] Paragraphs adapted from Teachers' Leaflet, No. 6, May 1, 1897, and from subsequent publications.

[Illustration]

Nature-study, as a process, is seeing the things that one looks at, and the drawing of proper conclusions from what one sees. Its purpose is to educate the child in terms of his environment, to the end that his life may be fuller and richer. Nature-study is not the study of a science, as of botany, entomology, geology, and the like. That is, it takes the things at hand and endeavors to understand them, without reference primarily to the systematic order or relationships of the objects. It is informal, as are the objects which one sees. It is entirely divorced from mere definitions, or from formal explanations in books. It is therefore supremely natural. It trains the eye and the mind to see and to comprehend the common things of life; and the result is not directly the acquiring of science but the establishing of a living sympathy with everything that is.

The proper objects of nature-study are the things that one oftenest meets. Stones, flowers, twigs, birds, insects, are good and common

subjects. The child, or even the high school pupil, is first interested in things that do not need to be analyzed or changed into unusual forms or problems. Therefore, problems of chemistry and of physics are for the most part unsuited to early lessons in nature-study. Moving things, as birds, insects and mammals, interest children most and therefore seem to be the proper objects for nature-study; but it is often difficult to secure such specimens when wanted, especially in liberal quantity, and still more difficult to see the objects in perfectly natural conditions. Plants are more easily had, and are therefore usually more practicable for the purpose, although animals and minerals should by no means be excluded.

If the objects to be studied are informal, the methods of teaching should be the same. If nature-study were made a stated part of a rigid curriculum, its purpose might be defeated. One difficulty with our present school methods is the necessary formality of the courses and the hours. Tasks are set, and tasks are always hard. The best way to teach nature-study is, with no hard and fast course laid out, to bring in some object that may be at hand and to set the pupils to looking at it. The pupils do the work,--they see the thing and explain its structure and its meaning. The exercise should not be long, not to exceed fifteen minutes perhaps, and, above all things, the pupil should never look upon it as a "recitation," nor as a means of preparing for "examination." It may come as a rest exercise, whenever the pupils become listless. Ten minutes a day, for one term, of a short, sharp, and spicy observation lesson on plants, for example, is worth more than a whole text-book of botany.

The teacher should studiously avoid definitions, and the setting of patterns. The old idea of the model flower is a pernicious one, because it does not exist in nature. The model flower, the complete leaf, and the like, are inferences, and pupils should always begin with things and phenomena, and not with abstract ideas. In other words, the ideas should be suggested by the things, and not the things by the ideas. "Here is a drawing of a model flower," the old method says; "go and find the nearest approach to it." "Go and find me a flower," is the true method, "and let us see what it is."

Every child, and every grown person too, for that matter, is interested in nature-study, for it is the natural way of acquiring knowledge. The only difficulty lies in the teaching, for very few teachers have had experience in this informal method of drawing out the observing and reasoning powers of the pupil without the use of text-books. The teacher must first of all feel in natural objects the living interest which it is desired the pupils shall acquire. If the enthusiasm is not catching, better let such teaching alone.

Primarily, nature-study, as the writer conceives it, is not knowledge. He would avoid the leaflet that gives nothing but information. Nature-study is not "method." Of necessity each teacher will develop a method; but this method is the need of the teacher, not of the subject.

Nature-study is not to be taught for the purpose of making the youth a specialist or a scientist. Now and then a pupil will desire to pursue a science for the sake of the science, and he should be encouraged. But every pupil may be taught to be interested in plants and birds and insects and running brooks, and thereby his life will be the stronger.

The crop of scientists will take care of itself.

It is said that nature-study teaching is not thorough and therefore is undesirable. Much that is good in teaching has been sacrificed for what we call "thoroughness,"--which in many cases means only a perfunctory drill in mere facts. One cannot teach a pupil to be really interested in any natural object or phenomenon until the pupil sees accurately and reasons correctly. Accuracy is a prime requisite in any good nature-study teaching, for accuracy is truth and it develops power. It is better that a pupil see twenty things accurately, and see them himself, than that he be confined to one thing so long that he detests it. Different subjects demand different methods of teaching. The method of mathematics cannot be applied to dandelions and polliwogs.

The first essential in nature-study is actually to see the thing or the phenomenon. It is positive, direct, discriminating, accurate observation. The second essential is to understand why the thing is so, or what it means. The third essential is the desire to know more, and this comes of itself and thereby is unlike much other effort of the schoolroom. The final result should be the development of a keen personal interest in every natural object and phenomenon.

Real nature-study cannot pass away. We are children of nature, and we have never appreciated the fact so much as we do now. But the more closely we come into touch with nature, the less do we proclaim the fact abroad. We may hear less about it, but that will be because we are living nearer to it and have ceased to feel the necessity of advertising it.

Much that is called nature-study is only diluted and sugar-coated science. This will pass. Some of it is mere sentimentalism. This also will pass. With the changes, the term nature-study may fall into disuse; but the name matters little so long as we hold to the essence.

All new things must be unduly emphasized, else they cannot gain a foothold in competition with things that are established. For a day, some new movement is announced in the daily papers, and then, because we do not see the head lines, we think that the movement is dead; but usually when things are heralded they have only just appeared. So long as the sun shines and the fields are green, we shall need to go to nature for our inspiration and our respite; and our need is the greater with every increasing complexity of our lives.

All this means that the teacher will need helps. He will need to inform himself before he attempts to inform the pupil. It is not necessary that he become a scientist in order to do this. He goes as far as he knows, and then says to the pupil that he cannot answer the questions that he cannot. This at once raises him in the estimation of the pupil, for the pupil is convinced of his truthfulness, and is made to feel--but how seldom is the sensation!--that knowledge is not the peculiar property of the teacher but is the right of any one who seeks it. Nature-study sets the pupil to investigating for himself. The teacher never needs to apologize for nature. He is teaching merely because he is an older and more experienced pupil than his pupil is. This is the spirit of the teacher in the universities to-day. The best teacher is the one whose pupils the farthest outrun him.

In order to help the teacher in the rural schools of New York, we have conceived of a series of leaflets explaining how the common objects can be made interesting to children. Whilst these are intended for the teacher, there is no harm in giving them to the pupil; but the leaflets should never be used as texts from which to make recitations. Now and then, take the children for a ramble in the woods or fields, or go to the brook or lake. Call their attention to the interesting things that you meet--whether you yourself understand them or not--in order to teach them to see and to find some point of sympathy; for every one of them will some day need the solace and the rest which this nature-love can give them. It is not the mere information that is valuable; that may be had by asking someone wiser than they, but the inquiring and sympathetic spirit is one's own.

The pupils will find their regular lessons easier to acquire for this respite of ten minutes with a leaf or an insect, and the school-going will come to be less perfunctory. If you must teach drawing, set the picture in a leaflet before the pupils for study, and then substitute the object. If you must teach composition, let the pupils write on what they have seen. After a time, give ten minutes now and then to asking the children what they saw on their way to school.

Now, why is the College of Agriculture at Cornell University interesting itself in this work? It is trying to help the farmer, and it begins with the most teachable point--the child. The district school cannot teach technical professional agriculture any more than it can teach law or engineering or any other profession or trade, but it can interest the child in nature and in rural problems, and thereby join his sympathies to the country at the same time that his mind is trained to efficient thinking. The child will teach the parent. The coming generation will see the result. In the interest of humanity and country, we ask for help.

How to make the rural school more efficient is one of the most difficult problems before our educators, but the problem is larger than mere courses of study. Social and economic questions are at the bottom of the difficulty, and these questions may be beyond the reach of the educator. A correspondent wrote us the other day that an old teacher in a rural school, who was receiving \$20 a month, was underbid 50 cents by one of no experience, and the younger teacher was engaged for \$19.50, thus saving the district for the three months' term the sum of \$1.50. This is an extreme case, but it illustrates one of the rural school problems.

One of the difficulties with the rural district school is the fact that the teachers tend to move to the villages and cities, where there is opportunity to associate with other teachers, where there are libraries, and where the wages are sometimes better. This movement is likely to leave the district school in the hands of younger teachers, and changes are very frequent. To all this there are many exceptions. Many teachers appreciate the advantages of living in the country. There they find compensations for the lack of association. They may reside at home. Some of the best work in our nature-study movement has come from the rural schools. We shall make a special effort to reach the country schools. Yet it is a fact that new movements usually take root in the city schools and gradually spread to the smaller places. This is not the fault of the country teacher; it comes largely from the fact that his time is occupied by so many various duties and that the rural schools do

not have the advantage of the personal supervision which the city schools have.

Retrospect and Prospect after five years' work.[2]

[2] From Bull. 206, Sixth Report of Extension Work, 1902.

To create a larger public sentiment in favor of agriculture, to increase the farmer's respect for his own business,--these are the controlling purposes in the general movement that we are carrying forward under the title of nature-study. It is not by teaching agriculture directly that this movement can be started. The common schools in New York will not teach agriculture to any extent for the present, and the movement, if it is to arouse a public sentiment, must reach beyond the actual farmers themselves. The agricultural status is much more than an affair of mere farming. The first undertaking, as we conceive the problem, is to awaken an interest in the things with which the farmer lives and has to do, for a man is happy only when he is in sympathy with his environment. To teach observation of common things, therefore, has been the fundamental purpose. A name for the movement was necessary. We did not wish to invent a new name or phrase, as it would require too much effort in explanation. Therefore, we chose the current and significant phrase "nature-study," which, while it covers many methods and practices, stands everywhere for the opening of the mind directly to the common phenomena of nature.

We have not tried to develop a system of nature-study nor to make a contribution to the pedagogics of the subject. We have merely endeavored, as best we could, to reach a certain specific result,--the enlarging of the agricultural horizon. We have had no pedagogical theories, or, if we have, they have been modified or upset by the actual conditions that have presented themselves. Neither do we contend that our own methods and means have always been the best. We are learning. Yet we are sure that the general results justify all the effort.

Theoretical pedagogical ideals can be applied by the good teacher who comes into personal relations with the children, and they are almost certain to work out well. These ideals cannot always be applied, however, with persons who are to be reached by means of correspondence and in a great variety of conditions, and particularly when many of the subjects lie outside the customary work of the schools.

Likewise, the subjects selected for our nature-study work must be governed by conditions and not wholly by ideals. We are sometimes asked why we do not take up topics more distinctly agricultural or economic. The answer is that we take subjects that teachers will use. We would like, for example, to give more attention to insect subjects, but it is difficult to induce teachers to work with them. If distinctly agricultural topics alone were used, the movement would have very little following and influence. Moreover, it is not our purpose to teach technical agriculture in the common schools, but to inculcate the habit of observing, to suggest work that has distinct application to the conditions in which the child lives, to inspire enthusiasm for country life, to aid in home-making, and to encourage a general movement towards the soil. These matters cannot be forced. In every effort by every member of the extension staff, the betterment of agricultural conditions

has been the guiding impulse, however remote from that purpose it may have seemed to the casual observer.

We have found by long experience that it is unwise to give too much condensed subject-matter. The individual teacher can give subject-matter in detail because personal knowledge and enthusiasm can be applied. But in general correspondence and propagandist work this cannot be done. With the Junior Naturalist, for example, the first impulse is to inspire enthusiasm for some bit of work which we hope to take up. This enthusiasm is inspired largely by the organization of clubs and by the personal correspondence that is conducted between the Bureau and these clubs and their members. It is the desire, however, to follow up this general movement with instruction in definite subject-matter with the teacher. Therefore, a course in Home Nature-study was formally established under the general direction of Mrs. Mary Rogers Miller. It was designed to carry on the experiment for one year, in order to determine whether such a course would be productive of good results and to discover the best means of prosecuting it. These experimental results were very gratifying. Nearly 2,000 New York teachers are now regularly enrolled in the Course, the larger part of whom are outside the metropolitan and distinctly urban conditions. Every effort is made to reach the rural teacher.

In order that the work may reach the children, it must be greatly popularized and the children must be met on their own ground. The complete or ideal leaflet may have little influence. For example, I prepared a leaflet on "A Children's Garden" which several people were kind enough to praise. However, very little direct result was secured from the use of this leaflet until "Uncle John" began to popularize it and to make appeals to teachers and children by means of personal talks, letters and circulars. So far as possible, his appeal to children was made in their own phrase. The movement for the children's garden has now taken definite shape, and the result is that more than 26,000 children in New York State are raising plants during the present year. Another illustration of this kind may be taken from the effort to improve the rural school grounds. I wrote a bulletin on "The Improvement of Rural School Grounds," but the tangible results were very few. Now, however, through the work of "Uncle John" with the teachers and the children, a distinct movement has begun for the cleaning and improving of the school grounds of the State. This movement is yet in its infancy, but several hundred schools are now in process of renovation, largely through the efforts of the children.

The idea of organizing children into clubs for the study of plants and animals, and other outdoor subjects, originated, so far as our work is concerned, with Mr. John W. Spencer himself an actual, practical farmer. His character as "Uncle John" has done much to supply the personality that ordinarily is lacking in correspondence work, and there has been developed amongst the children an amount of interest and enthusiasm which is surprising to those who have not watched its progress.

The problems connected with the rural schools are probably the most difficult questions to solve in the whole field of education. We believe, however, that the solution cannot begin directly with the rural schools themselves. It must begin in educational centres and gradually spread to the country districts. We are making constant efforts to reach the actual rural schools and expect to utilize fully every means within

our power, but it is work that is attended with many inherent difficulties. We sometimes feel that the agricultural status can be reached better through the hamlet, village, and some of the city schools than by means of the little red school house on the corner. By appeals to the school commissioners in the rural districts, by work through teachers' institutes, through farmers' clubs, granges and other means we believe that we are reaching farther and farther into the very agricultural regions. It is difficult to get consideration for purely agricultural subjects in the rural schools themselves. Often the school does not have facilities for teaching such subjects, often the teachers are employed only for a few months, and there is frequently a sentiment against innovation. It has been said that one reason why agricultural subjects are taught less in the rural schools of America than in those of some parts of Europe, is because of the few male teachers and the absence of school gardens.

We have met with the greatest encouragement and help from very many of the teachers in the rural schools. Often under disadvantages and discouragements they are carrying forward their part of the educational work with great consecration and efficiency. In all the educational work we have been fortunate to have the sympathy and co-operation of the State Department of Public Instruction. We do not expect that all teachers nor even a majority will take up nature-study work. It is not desirable that they should. We are gratified, however, at the large number who are carrying it forward.

This Cornell nature-study movement is one small part of a general awakening in educational circles, a movement which looks towards bringing the child into actual contact and sympathy with the things with which he has to do. This work is taking on many phases. One aspect of it is its relation to the teaching of agriculture and to the love of country life. This aspect is yet in its early experimental stage. The time will come when institutions in every State will carry on work along this line. It will be several years yet before this type of work will have reached what may be considered an established condition, or before even a satisfactory body of experience shall have been attained. Out of the varied and sometimes conflicting methods and aims that are now before the public, there will develop in time an institution-movement of extension agricultural teaching.

The literature issued by the Bureau of Nature-Study is of two general types: that which is designed to be of more or less permanent value to the teacher and the school; and that which is of temporary use, mostly in the character of supplements and circulars designed to meet present conditions or to rally the teachers or the Junior Naturalists. The literature of the former type is now republished and is to be supplied gratis to teachers in New York State. The first publication of the Bureau of Nature-Study was a series of teachers' leaflets. This series ran to twenty-two numbers. It was discontinued in May, 1901, because it was thought that sufficient material had then been printed to supply teachers with subjects for a year's work. It was never intended to publish these leaflets indefinitely. Unfortunately, however, some persons have supposed that because these teachers' leaflets were discontinued we were lessening our efforts in the nature-study work. The fact is that later years have seen an intensification of the effort and also a strong conviction on the part of all those concerned that the work has permanent educative value. We never believed so fully in the

efficiency of this kind of effort as at the present time.

THE HISTORICAL STATUS OF NESTING SEABIRDS OF THE NORTHERN AND WESTERN GULF OF ALASKA

The Project Gutenberg EBook of *Conservation of marine birds of northern
North America*, by Various
1975

by

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Abstract

The history of ornithological field work in the Gulf of Alaska dates back to 20 July 1741 and Bering's discovery of Alaska. In spite of this long history, the record is fragmentary and often seemingly contradictory. The coming of the tanker terminal at Valdez and the pending development of oil and gas resources on the outer continental shelf threaten massive change for seabirds in the Gulf of Alaska. Often overlooked, however, is the fact that man has already effected a change in status for many of these birds. In this paper I examine the scanty, general record from the exploratory period, roughly 1741 to 1935, and the somewhat more comprehensive record of the reconnaissance period, 1936-74, and attempt to develop a basis for better understanding of the change in seabird status that has already taken place. This paper should be treated as a verbal model which can be improved as our knowledge of seabirds in the Gulf of Alaska is expanded.

From the perspective of history, 1970 should prove to have been a momentous year for Alaska and its seabirds. Two events, the construction of the Trans-Alaska Pipeline and the passage of the National Environmental Policy Act (NEPA) merged head on in 1970 with

the decision that Section 2c of NEPA applied to the proposed pipeline. The systematic appraisal of potential environmental impacts required by Section 2c quickly exposed the inadequacy of the existing data base in many areas. With respect to seabirds in the Gulf of Alaska, it was apparent that there had never been any effort to develop a synthesis of the information accumulated over 230 years. The data gaps which were uncovered were appalling.

While the Trans-Alaska Pipeline impact statement had provided shock therapy, it was not the only influential event on the horizon. Two local disturbances had already preceded the pipeline. These were Project Chariot at Cape Thompson and the Amchitka Island test program. Now in quick succession the Wilderness Act and native land claims added new urgency to the need for solid resource information. More recently, the outer continental shelf minerals leasing program has made the quick development of base-line information even more essential.

All of the new activity in Alaska's coastal waters has the potential to affect seabirds in one way or another. We must remember, however, that man's activities have been affecting seabirds for a long time. We cannot accurately assess the effect of a tanker terminal at Valdez or offshore oil activity without first developing some understanding of the current status of seabirds in the context of the historical record.

Seabird work in Alaska can be divided roughly into three periods. The first is the early historical or exploratory period; it extended from Georg Steller's 1741 visit to Kayak Island to 1935. This was literally a period of exploration and the collection of information was dependent upon interest and opportunity. The second is the reconnaissance period; during this period investigators were dispatched to a particular area to gather general information for management application. This period begins with Murie's extensive investigations of the Alaska Peninsula and the Aleutian Islands; I see it extending from 1936 to 1975. In 1975 the need for data became so acute that it was necessary to enter the third period, one of intensive data gathering. Knowing where the big seabird colonies were located and knowing their general species composition was no longer adequate. The current intensive data-gathering effort in the waters over oil and gas leasing areas is a partial response to the recognition of this inadequacy.

In this paper I draw some tentative conclusions relative to the status of the 26 species of primary seabirds (Fisher and Lockley 1954) breeding in, or which may have bred in, the northern and western Gulf of Alaska area. This area extends from Cape Fairweather, 59°N 138°W, westerly along the coast to Ikatan Bay, 55°N 163°W, at the end of the Alaska Peninsula. These bird species tend to be colonial, but not exclusively so. Two birds which are primary seabirds, the mew gull (*Larus canus*) and Bonaparte's gull (*L. philadelphia*), have not been included because they tend to be more riverine than marine in habit. Several marine ducks have been excluded because they are secondary seabirds.

Information from the early exploratory period is summarized under the next section. The more detailed information from the reconnaissance period is discussed in the species accounts.

Summary of the Historical Record

The history of ornithological field work in the Gulf of Alaska goes back 235 years to 20 July 1741. On that day Bering's surgeon/naturalist, Georg W. Steller, spent a scant 10 h ashore on Kayak Island. He collected a single bird. This bird, later named for Steller, reminded him of a plate of the blue jay by Mark Catesby, the colonial-era predecessor of Audubon, in Volume 1 of the *Natural History of Carolina, Florida, and the Bahama Islands* (Stejneger's annotated translation of Steller's journal in Golder 1925). Collection of the bird confirmed for Steller that the first Russian Expedition had reached America.

Steller was an accomplished naturalist, but his overbearing and superior manner had apparently sorely irritated Bering and his officers long before the expedition reached Kayak Island. The seamen made little effort to go ashore anywhere in Alaska and Steller was blocked from doing so as well. In addition to Kayak Island, he was able to go ashore only on Nagai Island, first with a water party on 30 August and again the next day. He noted that "all sorts of waterbirds in abundance were seen." These included two kinds of cormorants, auks, ducks, gulls, divers, pigeon guillemots (*Cephus columba*), tufted puffins (*Lunda cirrhata*), and horned puffins (*Fratercula corniculata*).

Stejneger's comment on the identity of the cormorants is interesting because, based on his experience, he assumed them to be pelagic and double-crested cormorants (*Phalacrocorax pelagicus* and *P. auritus*). He gave no thought to red-faced cormorants (*P. urile*) which are now common there.

Steller noted on 6 September off Bird Island in the Shumagin Islands, that "when we were out to sea about half a mile we were especially astonished at the untold numbers of seabirds which we saw on the northern side of the island." These birds were listed as cormorants, auks, horned puffins, fulmars (*Fulmarus glacialis*), pigeon guillemots, black oystercatchers (*Haematopus backmani*), and a pied diver which Stejneger assumed was an ancient murrelet (*Synthliboramphus antiquus*).

On 15 September when Bering's vessel, the *St. Peter*, was south of Amukta Pass, Steller recorded observing "river gulls." The observation is not as interesting as Stejneger's comment (Golder 1925) concerning it. Stejneger stated that no true river gulls lived in the Aleutians and these must, therefore, have been another small gull with red feet. He thought they must have been the red-legged kittiwake (*Rissa brevirostris*), which "inhabits the Aleutian Islands from Bering Island to Sannak."

Thirty-seven years after Bering's voyage, Captain James Cook sailed into the Gulf of Alaska, arriving off Kayak Island on 11 May 1778. Cook was not accompanied by an able naturalist. His surgeon, William Anderson, did have some experience gained on earlier voyages in preparing skins and taking notes, but he had contracted tuberculosis and became so ill that even his notes ceased after 8 June, while the expedition was in Cook Inlet.

Cook was under orders to keep a careful record of everything he saw. One of the results was that he had birds collected even though he had no naturalist to do the work. Several birds were collected in Prince William Sound while Cook's vessels were at anchor in Port Etches. These included two marbled murrelets (*Brachyramphus marmoratus*--type specimens), a black oystercatcher, a surfbird (*Aphriza virgata*), a surf scoter (*Melanitta perspicillata*), and a red-breasted merganser (*Mergus serrator*--type specimen), along with several forest birds (Stresemann 1949).

The watch journals of Cook and his officers provide some additional information. Captain Charles Clerke (Beaglehole 1974) remarked in his log on the passage out of Prince William Sound through Montague Strait on 20 May that "it had almost become tautology to mention whales and seals and innumerable sea fowl that so confoundingly kept their distance."

Between the Trinity Islands and Chirikof Island on 18 June, Cook's men collected a single tufted puffin. Later Cook passed close to the Semidi Islands and the Shumagin Islands and directly through the Sandman Reefs. Beaglehole's version of this part of the voyage makes no mention of seabirds.

There is a gap of 87 years during which there is almost no hint of published material bearing on the status of seabirds in the Gulf of Alaska. In 1865 the Russo-American Telegraph Expedition touched this area. Dall and Bannister (1869) provide us with a few scraps garnered during that expedition, primarily by Bischoff. The glaucous-winged gull (*Larus glaucescens*) was described as the most common species from California northward. Bischoff's collections at Kodiak indicate that the horned and tufted puffins were collected with ease. He was able also to collect an Aleutian tern (*Sterna aleutica*--type specimen) along with an egg.

Dall (1873) noted in 1872 that the black-legged kittiwake (*Rissa tridactyla*) was common at Round Island and Delarof Harbor, Unga Island, in the Shumagins. The inference is that it was more common at these two places than elsewhere. The Arctic tern (*Sterna paradisaea*) was abundant in the Shumagin Islands and particularly at Range Island in Popoff Strait. Dall expressed the opinion that the horned puffin was very abundant in the Shumagins and appeared to fill the niche of the tufted puffin, which he did not see there. The only other bird which he thought to be very common was the pigeon guillemot. He did not note the common murre (*Uria aalge*) at all.

In 1908 the second of three Alexander Expeditions conducted field work in the Prince William Sound area. From Dixon (1908) and Grinnell (1910) we can derive some basis for assessing status in a very general way. The most common seabird noted was the marbled murrelet. Glaucous-winged gulls and black-legged kittiwakes were common; the glaucous-winged gull was the more common. Horned puffins were judged to be slightly more common than tufted puffins by both authors. The northern end of Montague Strait appears to have been the center of abundance for puffins. Dixon noted that on 16 July 1908 there were swarms of puffins in the channel along Green Island. Pigeon guillemots were common along the rocky coasts. Parakeet auklets (*Cyclorhynchus psittacula*), common murrelets, and ancient murrelets were noted only in very small numbers.

After the Alexander Expeditions there was another doldrum in which little was done. During this lull in activity, a note by Townsend (1913) appeared which compared the numbers of crested auklets (*Aethia cristatella*) at Yukon Harbor, Big Koniuji Island, to the least auklets (*A. pusilla*) of St. George Island, stating that the crested auklets were more numerous. He sailed into the Yukon Harbor anchorage on the evening of 1 August and observed that crested auklets "were present in myriads. The surface of the water was covered with them, and the air was filled with them."

The formal record available to researchers is very shallow for this exploratory period. With a few exceptions it was compiled by non-scientists, primarily explorers and egg and skin collectors.

Current Status

Setting the Stage

This paper should be viewed as a conceptual model. While I attempted to be as objective as possible, subjectivity was unavoidable. Many of the tentative conclusions are based on very little data. Each improvement will make it a better management tool. Because of the space limitations, it is not possible to go into a detailed tracking of my reasoning for each species. In an attempt to overcome this handicap, I am including some examples of the sorts of reasoning that went into the process.

In 1973 I led a Fish and Wildlife Service (FWS) reconnaissance survey team that was delineating seabird colonies along the Alaska Peninsula. In the Shumagin Islands we entered or crossed Koniuji Strait twice (on 11 and 12 June) without even suspecting the presence of a horned puffin colony. A third passage through the strait (13 June) was not so uneventful. The water and the air were filled with horned puffins. This led to the discovery that the 430-m mountain on the southeastern corner of Big Koniuji was also covered with horned puffins, clear to its top. The minimum estimate of the birds that were visible was 140,000. Even this number of birds would make this the largest horned puffin colony ever discovered. David Spencer (personal communication) had noted similar swarms of horned puffins in this strait in 1956 while flying sea otter surveys in the area. In 1975 a field camp was established at Yukon Harbor, with study of this colony as one of the prime objectives of the investigators. As far as these investigators could tell no such large colony existed there, even though the nesting habitat was still there, unaltered. This sort of event, one of the banes and vagaries of estimating seabird numbers, is not rare.

In 1973, when FWS personnel delineated the colony on the southwestern end of Bird Island in the Shumagins, there were estimated to be 43,000 kittiwakes, 24,000 murres, and 6,000 cormorants present; no tufted puffins were seen about the colony. The last time (in 1970) one of the observers, Edgar Bailey, had visited the colony with Robert Jones, there was an extremely large colony of tufted puffins which Jones (E. Bailey, personal communication) estimated at more than 1 million birds. We made a particular effort to visit Jude Island, between the Shumagin

Islands and the Pavlof Islands, because David Spencer (personal communication) had reported once having seen the air over the island filled with an extremely large number of tufted puffins. However, there were no puffins at this colony either.

Let us examine the facts in context. On 8 June we had visited High Island where we had attempted to collect puffin eggs for pesticide analysis, but had been able to find only one egg. Also, there were only 6,000 tufted puffins where George Putney, master/engineer of the Aleutian Tern, had seen much larger numbers in 1972. These two facts could easily be related to explain the current situation because it was still early in the breeding season. The horned puffin observations in Koniujj Strait (11-13 June) were in keeping with this conclusion also--an indication that these birds had not yet settled down to a full breeding effort. The erratic comings and goings of common puffins (Fratercula arctica) early in the season have been well documented (Lockley 1962). It is an easy step to extend this reasoning to the absence of birds at Bird Island on 11 June, even though fresh signs of the characteristic evidence of tufted puffin occupancy were missing. Jude Island provides a different clue, however. There were 3,000 pigeon guillemots, an unheard-of concentration, apparently occupying abandoned tufted puffin burrows on 15 June. Also, on 7 June we had made a very interesting observation that had no special significance at the time: murres on Spitz Island were occupying little parapets created by mashing down the mouths of puffin burrows which filled the slope above the cliff portion of their colony.

After looking at all of the observations cited above, I conclude that tufted puffins were greatly reduced in numbers on these sites in 1973 and that they had been absent from the burrows used by the murres and pigeon guillemots for more than the current breeding season. What causes these sorts of changes? I do not know.

One reason for year-to-year change may be local movements of colonies. Black-legged kittiwakes nest at several places in lower Orca Inlet, Prince William Sound. Counts made at these sites in 1972 and 1974 yielded almost identical totals but the numbers of birds varied between individual sites. This may be an indication that all of these sites are part of one large composite colony and that, at least in this colony and for this species, the birds shift at will.

The best record of population flux involving two species has been summarized by Peterson and Fisher (1955). In 1872 and 1873 the murres observed on Walrus Island in the Pribilofs were almost entirely common murres. In 1890 common and thick-billed murres (Uria lomvia) were evenly matched in number. By 1901 the colony was almost exclusively dominated by thick-billed murres. In 1911 and 1914 the few thick-billed murres present were almost lost among the then dominant common murres. In 1940 thick-billed murres dominated again. When Peterson and Fisher visited the island in 1953, the situation was again reversed and common murres had almost completely replaced the thick-billed murres. These changes are even more impressive because of the number of birds involved, between 1 and 2 million in 1953. There are more tenuous indications that somewhat the same thing may occur between two other congener pairs, the pelagic and red-faced cormorants and the black-legged and red-legged kittiwakes. The causative factor, or factors, is not readily apparent. One possibility is long-term climatic

fluctuation.

Dement'ev and Gladkov (1966) provide an example of abrupt and massive change. Before 1876, the pelagic cormorant abounded on the Commander Islands. During the winter of 1876-77, the birds were decimated by an unknown epizootic disease. By spring only a few individuals remained alive. The record shows that by 1882 they were already becoming common again. Red-faced cormorants were apparently not reduced in number because Dement'ev and Gladkov (1966) state that they were common in "the second half of the last century and the beginning of this." Did they flourish only while the pelagic cormorants were reduced in number?

Bowles (1908) gives another indication of naturally induced population impact. He noted large numbers of dead seabirds on Washington beaches and the ocean "rather plentifully dotted with sick birds ..." He examined some birds and found "many hundreds" of tapeworms in every bird. His conclusion was that their intestines were so solidly packed with tapeworms that starvation was "an absolute certainty."

Some apparent disruptions are long term. In the Gulf of Alaska there is a hiatus in the distributions of a number of small seabirds that are active around their colonies only at night. Repeatedly, the northern Gulf of Alaska shows up as an area of reduced population, as a boundary between subspecies, or as a limit to a range. This same area has a noticeable lack of total darkness during a substantial portion of the breeding season.

The nocturnal habit no doubt evolved because it was advantageous to concentrate on the breeding grounds only under the cover of darkness, when diurnal predators were at a great disadvantage. Cody (1973) states that Cassin's auklet (*Ptychoramphus aleuticus*), which is strictly nocturnal around its colonies, avoids these colonies on brightly moonlit nights. He sees this as an apparent response to gull predation. At higher latitudes the small alcids have overcome this disadvantage by swamping predators through their sheer numbers. In the Gulf of Alaska I suspect that few of the small seabirds, except possibly the fork-tailed storm-petrel (*Oceanodroma furcata*), have ever achieved great enough numbers to offset the impact of extended daylight.

Past disruptions of seabird populations are both natural and man-induced; however, the documentary record is much too fragmentary to allow us to fully appreciate what has occurred or what the long-term effect has been. To give some perspective to the problems associated with assessing change and attempting to understand it, some of the indicators of natural and unnatural change and flux in seabird populations are reviewed here.

The flux in bird numbers can be related to the time of day, season of the year, and atmospheric conditions on a short-term basis. This sort of flux or apparent flux can easily be explained. The underlying cause of some of the longer term flux is not so easily arrived at. Murie (1959), Gabrielson and Lincoln (1959), and Sowl and Bartonek (1974) have noted some of the man-induced changes. These are also explored to some extent in the species accounts as they are found to apply.

I sometimes refer to a colony size class when discussing the existing data rather than to an actual population estimate. The size classes

used are defined as follows:

Class I--less than 100 birds
Class II--100-1,000
Class III--1,000-10,000
Class IV--10,000-100,000
Class V--100,000-1,000,000
Class VI--more than 1,000,000

The Dictionary of Alaska Place Names (Orth 1967) is the reference for those who wish to locate some of the less obvious sites. The Coast Pilot, No. 9 (U.S. Department of Commerce 1964) is another useful reference.

Species Accounts [Abridged by Editor]

Northern Fulmar (Fulmarus glacialis)

Petrels of a number of species can be found in the Gulf of Alaska, some of them in great numbers. Only the northern fulmar breeds there.

The fulmar is common in the offshore waters of the northern Gulf of Alaska throughout most of the year (Isleib and Kessel 1973). Most authors, including Clark (1911), one of the earlier ones, who commented on the distribution of fulmars farther out in the Gulf, have considered them to be abundant. Nichols (1927) raised one of the few voices of apparent dissent; he noted that in 1926 he encountered the largest number of fulmars (about 800) on 11 July in Shelikof Strait after he had left the Gulf. During the summer, fulmars are very common seaward of Montague Island, particularly to the northeast of Patton Bay and in the approaches to Montague Strait. Data derived from FWS surveys in July and August 1972 showed an estimated 10,000 fulmars in a stretch of waters 19 km wide along the east side of Montague Island (Isleib and Kessel 1973).

Over the Portlock Banks and in Stevenson Entrance, fulmars sometimes concentrate in very large numbers, either by themselves or in company with sooty shearwaters (Puffinus griseus). In August 1973, FWS observers crossing Perenosa Bay saw large numbers of tube-nosed birds moving northeastward across the Bay. Although these appeared to be predominantly shearwaters, there were also many fulmars. There was a general movement of birds through Shuyak Strait from Shelikof Strait into the Gulf of Alaska. It was not determined whether the fulmars were moving with the shearwaters or on a regular feeding flight. Fulmars are often found close to Afognak Island in the area between Sea Lion Rocks and Sea Otter Island. Gabrielson and Lincoln (1959) reported seeing swarms of fulmars in Marmot Strait and around the small islands on the north side of Afognak in early August. Murie (1959) noted fulmars in Shelikof Strait and again around the Shumagin Islands. There is nothing in this record to indicate any change in their distribution at sea recently.

The Semidi Islands support the Gulf of Alaska's largest fulmar breeding population, a Class V colony (U.S. Bureau of Sport Fisheries and Wildlife 1973). Gabrielson and Lincoln (1959) considered it to be one

of the four largest colonies in Alaska.

Gabrielson (1940) was told by Captain Sellevold of the marine vessel Brown Bear that he thought the birds nested on Sea Otter Island in Perenosa Bay. Gabrielson also learned that they probably nested on Sea Lion Rock at the head of Marmot Strait. In August 1973 I observed fulmars in close proximity to Sea Lion Rock. More recently, small numbers of apparently breeding fulmars have been found in the Barren Islands (L. W. Sowl, personal observation and Edgar Bailey, unpublished FWS report, Anchorage, Alaska). Although no other colonies are known or suspected, the evidence suggests the possible existence of some.

Peterson and Fisher (1955), on noting dark fulmars between St. Paul and St. George when only the light morph was present on any of the colonies in the Pribilofs, expressed no surprise. They offered the opinion that a round trip of 960 km to one of the dark morph colonies in the Aleutians just might be within the operating range of a fulmar on a 4-day vacation from nest-tending duties. Using this as a general yardstick, it appears that the rich foraging grounds over the Portlock Banks might also be within the range of breeding fulmars from the Semidis. The trip up Shelikof Strait and on to Portlock Bank by way of Shuyak Strait is only slightly longer than the one from Chagulak to St. Paul. The feeding grounds off Montague Island would require a 1,600-km round trip from the colonies in the Semidi Islands. Birds from the Barren Islands and any colonies around Shuyak Island could easily reach the Montague Island grounds, but why would they cross the Portlock Banks to do so?

Fulmar colonies may be found in the Chiswell Islands. It is also a possibility that the existence of colonies on islands along the north coast of Afognak Island will be verified and that others will be found in the vicinity of Shuyak Island. Gabrielson and Lincoln (1959) expressed the opinion that there is almost certainly a colony on Sutwik Island. If there is one, however, I did not see it on one quick trip around the island in 1973.

Gabrielson (1940) expressed surprise at the size of the Semidi Island breeding colony. Gabrielson and Lincoln (1959) considered 1911 to be the first time breeding fulmars were found in the Shumagins. They apparently based this on two eggs collected there that year and documented in a plate in Bent (1964). Other than Gabrielson's opinion, there is nothing to indicate a major change in fulmar status during this century. If there has been a change in status, it has probably been in the direction of increasing populations.

Fork-tailed Storm-petrel (Oceanodroma furcata)

The fork-tailed storm-petrel probably breeds throughout the Gulf of Alaska. It is abundant at sea during the summer in most offshore waters. Murie (1959) described it as the dominant petrel in the Bering Sea and the North Pacific.

In view of its wide distribution and apparent abundance very little is known about the fork-tailed storm-petrel's breeding colonies. Friedmann (1935) recorded specimens and eggs from Kodiak dating back to 1843. Murie (1959) noted them as nesting on Sanak Island and stated that they

almost certainly nested in the Shumagins and on other islands along the Alaska Peninsula. David Roseneau (Isleib and Kessel 1973) found this storm-petrel "breeding by the 10,000's" on East Amatuli Island in the Barren Islands in June 1965. This was subsequently verified in 1974 by Edgar P. Bailey (unpublished report, FWS, Anchorage, Alaska).

On 2 July 1972, responding to a tip by James W. Brooks (personal communication), M. E. Isleib and I anchored at Fish Island in the Wooded Islands. We did not locate any storm-petrel burrows, but a steady flow of storm-petrels passed over the boat throughout the darkest part of the night. Surveys conducted at about that time provided an estimate of 19,000 fork-tailed storm-petrels in Prince William Sound, primarily in or close to Montague Strait, and in coastal waters on the east side of the Sound's outer islands. In this area Isleib (personal communication) has noted a general movement of fork-tailed storm-petrels westward around Montague Island and into Prince William Sound through Montague Strait each morning and a corresponding countermovement each evening. I conclude that in 1972 there was a Class IV colony in the Wooded Islands, numbering between 19,000 and 38,000 birds. Additional colonies will be discovered in a similar manner as more systematic searches are made.

No colonies were discovered during the 1973 reconnaissance survey of the islands south of Alaska Peninsula. Working primarily inshore, FWS investigators encountered very few storm-petrels during the day. On the night of 14 June, the FWS vessel, *Aleutian Tern*, responded to a Mayday call and was either in transit or participating in rescue operations from 2245 to 0420 h on the morning of 15 June. During this period numerous fork-tailed storm-petrels were encountered, particularly off Cape Wedge on Nagai Island. After we anchored in Eagle Harbor on Nagai, more storm-petrels were heard about the vessel.

At about this same date, National Marine Fisheries Service enforcement officers flying fisheries patrols observed storm-petrels in abundance south of the Shumagin Islands (James Branson, personal communication). These observations support the belief that there are probably substantial undiscovered colonies in the Shumagin Islands.

Fork-tailed storm-petrels are abundant summer residents in the northern Gulf of Alaska and the estimate by Isleib and Kessel (1973) is that populations using the waters off the North Gulf Coast probably number in the millions. Certainly the same estimate is valid for the rest of the Gulf area west of the Chugach Islands.

The status of these birds relative to their historical abundance cannot be derived from the existing information. There is strong suspicion that the introduction of fox on many of the islands in the area during the early part of this century probably caused a reduction in their numbers. Murie (1959) said that experience taught him that wings left from fox kills or remains of storm-petrels in fox droppings could be accepted as evidence of the presence of a colony. Gabrielson and Lincoln (1959) reported that E. P. Walker visited the Wooded Islands in 1922 searching for a storm-petrel colony that had been reported to exist there in 1918. He could not find it even though he searched diligently. This apparent disappearance was attributed to the introduction of fox.

There is another factor to consider, however. The limited number of specimens now available from the Gulf of Alaska indicates that separate subspecies occupy the eastern and western Gulf of Alaska. The accepted boundary is somewhere in the vicinity of Prince William Sound. This is an indication that there has been a hiatus in this area of rather long duration. I have speculated that this sort of break may be in some way related to the length of day and a period during the summer when there is little darkness to cover activities near the colony. Thoresen (1964) and Cody (1973) have both reported that western gulls *(Larus occidentalis)* assemble in Cassin's auklet colonies on moonlit nights to prey on arriving adults. It is likely that other nocturnal species would provoke the same sort of hunting tactic. A light-related predation factor implies that the predators rely on sight. Avian predators are indicated.

Leach's Storm-petrel *(Oceanodroma leucorhoa)*

Even less well understood than the breeding distribution of the fork-tailed storm-petrel is that of Leach's storm-petrel.

Bendire (1895) quotes notes from Chase Littlejohn, who found Leach's storm-petrel to be an abundant breeder on unspecified small islands near Sanak in 1894. It greatly outnumbered the fork-tailed storm-petrel. On his visit in 1937 Murie (1959) learned that all of the large colonies of seabirds that had once existed there were gone. He attributed this to overfishing and associated perturbation and to the introduction of fox. No systematic assessment of seabirds on Sanak has been attempted since Littlejohn's time.

No Leach's storm-petrel colonies have been encountered during reconnaissance surveys of the Gulf of Alaska. Small numbers have been reported from time to time and while it is very much less abundant than the fork-tailed storm-petrel, I expect that it will be found in small numbers at various places in the Gulf of Alaska when it becomes possible to make more thorough searches. It may occur in remote areas like the smaller islands scattered throughout the Sandman Reefs--possibly even in large numbers. On the basis of the Sanak record, we must assume that this storm-petrel has been greatly reduced in numbers, at least in the western portion of the Gulf.

Double-crested Cormorant *(Phalacrocorax auritus)*

The white-crested cormorant, the race of the double-crested cormorant residing in the Gulf of Alaska, is principally an inhabitant of the marine environment. This cormorant is a common, but apparently patchily distributed, resident throughout the northern and western Gulf of Alaska.

Gabrielson and Lincoln (1959) thought that it nested only from Kodiak Island westward into the Aleutians. However, it probably breeds from Yakutat Bay westward. Isleib and Kessel (1973) estimated the abundance of the double-crested cormorant along the North Gulf Coast as several thousands, about one-tenth as common as the pelagic cormorant. It is the third most abundant of the four cormorant species nesting in the area. It occurs as scattered inclusions in many colonies throughout

the area, and at least in the Shumagin Islands, even occurs in some colonies by itself.

There are no data on which to base an estimate of any change in status. It probably is not much affected by many of the naturally occurring perturbations.

Brandt's Cormorant *(Phalacrocorax penicillatus)*

On 22 July 1972, 13 Brandt's cormorants (4 sitting on nests) were found at Seal Rocks in Hinchinbrook Entrance, Prince William Sound (Isleib and Kessel 1973). Two years later I positively identified two individuals in breeding plumage among a mixed group of cormorants in the Chiswell Islands west of Seward. Are these recent range extensions? Possibly, but I propose an alternative explanation.

Palmer (1962) showed the distribution of this cormorant as breeding north to Puget Sound and as a straggler north to Forrester Island, Alaska. This viewpoint is shared by the American Ornithologists' Union (1957), which regards the bird as casual as far north as Forrester Island, where this species was collected by Willet (1918).

Let us look at the other record, the one that is not supported by specimens. Bent (1964) thought of Brandt's cormorant as a breeding resident of Forrester Island. Gabrielson and Lincoln (1959) admonished bird observers to be on the lookout for this particular cormorant in the vicinity of Ketchikan and Prince of Wales Island. Brandt's cormorant also appears on the bird list for the Kodiak National Wildlife Refuge as an accidental visitor.

Early observers like Bent were explorers. They carefully examined and made notes on all the birds they saw because there was always a chance of a new discovery. It is also very probable that Bent paid particular attention to the cormorants when he was at a place like Forrester Island. He would have undoubtedly been very interested in trying to confirm the presence of the now extinct Palla's cormorant *(P. perspiculatus)*, as he must have been aware of Schlegel's (1862-64) list of the birds in the Dresden Museum since Willet (1914) had recently referred to it. The staffs for the Kodiak and Aleutian Islands National Wildlife refuges have included some very careful observers, such as Frank Beals. These men would have noticed the difference if a new bird such as Brandt's cormorant was seen, verified the sighting visually, and then noted it in their field diaries. They would not have bothered to develop the type of proof needed for an undisputable record, but the bird would have appeared in the refuge bird list (as it does).

The outside coasts of the Alexander Archipelago, Kenai Peninsula, and the Islands of the Kodiak Archipelago impose some logistical requirements which discourage all but the most determined birders. Not many have been able to reach more than very limited segments of the entire coast. Given the vast distances involved, few of the FWS vessels passing through the area have had the time to thoroughly examine any cormorant colonies or roosts bird by bird. Even for those who pause, the ever present swells and the constant chop of the summer westerlies make positive identification difficult.

It is possible that Brandt's cormorant has been in the area in small numbers for a long time, either regularly or intermittently. It could have escaped observation because of the conditions described above. This species may be there as a relict, as a pioneer, or only because surplus birds are being pushed into marginal habitat by population pressures on their main range to the south.

Ancient Murrelet *(Synthliboramphus antiquus)*

Chase Littlejohn (Bendire 1895) spent the spring and summer of 1894 collecting eggs on islands south of the Alaska Peninsula. He has left us a detailed record of what he saw but not where he saw it. Bent (1963) stated flatly that the site of his collecting was Sanak Island and this has common acceptance. Several things in his account point to a site which was a small island with several peers close by, but this could not have been Sanak. It could have been an island in the Sanak Island group or it could equally well have been somewhere in the Sandman Reefs. Unfortunately, because of this the record is clouded. There has never been anything approaching a survey of the southern half of the Sandman Reefs. We do not know what breeding colonies are there.

At any rate, Littlejohn told of the large numbers of Leach's storm-petrels, fork-tailed storm-petrels, auklets (of which only Cassin's is specifically identified), and ancient murrelets which occupied a large number of small islands. He could not calculate the number of breeding murrelets on his small island, the size of which I interpret to have been of the same order of magnitude as two others which he estimated were about 2 acres. He does say that the murrelets must have numbered several thousand and could, if left alone by the Aleuts, have quickly grown too numerous for the island to accommodate.

Murie (1959) made a brief visit to Sanak in 1937 and learned that there were no longer any large colonies of seabirds. He attributes this to exploitation of the fisheries and to the fox-farming industry. Littlejohn told of the repeated visits of Aleuts to his small islands, where they took hundreds of birds each time and all of the eggs they could find. This kind of activity could not help but disrupt the breeding on these islands.

Littlejohn's description of the ancient murrelet's nest leaves little doubt that the birds could be reached by fox or rats with ease. The birds showed no particular care in selecting a nest site and often worked their way back no more than about a meter into the dead vegetative cover from preceding years, where they scratched out a shallow nest.

There are few records of the ancient murrelet from the northern and western Gulf of Alaska. Friedmann (1935) reported the collection of a series of eggs in 1884 on Kodiak Island. Chase Littlejohn (Bendire 1895) collected eggs from somewhere in the Sanak Group in 1894. In 1908 Dixon (Grinnell 1910) saw a bird in Port Nellie Juan. Several were seen by Jaques (1930) near Belkofski in May 1928. Gabrielson collected one bird at Cordova in September 1941 and another at the Chiswell Islands in July 1945 (Gabrielson and Lincoln 1959). He saw numerous flocks in the Gulf of Alaska on 30 July of an unnamed year. In 1943, he would

have been near Cape Spencer on that date. In 1945 he would have been near the Chiswell Islands. In either case, he was probably somewhere in Blying Sound.

The ancient murrelet is relatively uncommon but regularly observed in the inshore waters along the outer coasts of the islands fronting Prince William Sound. FWS surveys in July-August 1972 provided an estimate of almost 1,000 birds, mostly in nonbreeding plumage, along the outer coast of Prince William Sound (Isleib and Kessel 1973). Small numbers were found feeding close to the Wooded Islands on 24 July (my personal observation). Rausch (1958) saw a few off Middleton Island in 1956. Isleib (Isleib and Kessel 1973) saw 400-500 widely distributed at the mouth of Yakutat Bay in July and August 1968. The only large numbers of ancient murrelets encountered on the FWS survey of the Alaskan Peninsula in 1973 were in the Shumagin Islands. They were very common in East Nagai Strait on 9 June and more than half of the 1,300 seabirds per square nautical mile encountered between Little Koniuji and Chernabura Islands on 11 June were ancient murrelets. At Nagai Island an estimated 5,000 ancient murrelets were observed in the west bay at Pirate Shake, and later (on 19 June) several were observed in the vicinity of Midun Island (FWS, Anchorage, Alaska, unpublished data).

On the basis of the observations recounted above, I have to conclude that ancient murrelets are fairly regularly, if patchily, distributed throughout the northern and western Gulf of Alaska. I do not believe that the void in their range shown for the northern Gulf of Alaska by Udvardy (1963) is correct. Several colonies are there, awaiting discovery.

Ancient murrelets are not abundant in the Gulf of Alaska but they are certainly more numerous than we have been able to prove. It is not possible to tell from the existing data whether they were once more abundant than they are now. I suspect, on the basis of the Sanak Island experience, that we can conclude that this species has been reduced in number by various of man's activities.

Cassin's Auklet *(Ptychoramphus aleuticus)*

Cassin's auklet is a very uncommon bird in the northern Gulf of Alaska. In the western Gulf it is more common, particularly from the Shumagins west.

This auklet apparently once bred in great numbers on islands in or near the Sanak Group where Chase Littlejohn (Bendire 1895) found them to be twice as numerous as the ancient murrelets. Murie (1959) did not find them there.

Littlejohn began encountering Cassin's auklets at sea some 290 km southeast of Unga, Shumagin Islands. Murie (1959) encountered them near the Shumagins in May 1937. During the FWS 1973 reconnaissance survey of the Alaska Peninsula, these auklets were not encountered (or at least not identified) until we reached the vicinity of Unga Strait where we saw a few in mixed flocks with other murrelets and auklets. They were most numerous in East Nagai Strait. We encountered them only twice in a situation which indicated they might be breeding--on Hall and Herendeen islands on the north end of Little Koniuji Island.

Murie (1959) considered Cassin's auklet to be no longer common west of Kodiak. In Gabrielson's many voyages through the northern and western Gulf of Alaska he encountered them only twice, once off Cape Spencer and once in the Chiswell Islands.

Thoresen (1964) commented that throughout the northern part of its range the Cassin's auklet has become gradually less frequent. Although there are no data to dispute this, I believe, as do Isleib and Kessel (1973), that they are more numerous than observations would indicate, and I would apply this to the entire area. There are certainly colonies remaining in the Shumagin Islands, and quite probably along the south coast of the Kenai Peninsula. When it is possible to fully explore the Sandman Reefs there is a good probability that they will be found there.

We can only guess at the reasons for their decline. Bendire (1895) and Murie (1959) have described some contributing factors.

Tufted Puffin _(Lunda cirrhata)_

The tufted puffin, as previously indicated, is also a bird with widely fluctuating populations. Until we develop an understanding of their population dynamics and can understand the underlying cause of these fluctuations it will not be possible to assess trends in their populations or understand the implications of such trends.

Tufted puffins are abundant throughout the Gulf of Alaska. Small colonies can be located almost anywhere. Along the Alaska Peninsula there are a number of colonies with an estimated breeding population in 1973 of more than 15,000 birds. These are: Ashiiak Island (20,000), Central Island (90,000), the Brother Islands (45,000), The Haystacks (19,000), Castle Rock (85,000), Bird Island (none, but may contain 500,000-1,000,000 at times), Peninsula Islands (35,000), the Twins (18,000), Amagat Island (40,000), and Umga Island (22,000). These colonies correspond to the area where colonies were listed for the horned puffin.

Tufted puffin populations respond readily to some undetermined short-term perturbations. This is clearly demonstrated by their rapid population fluctuations. Because of their numbers and because of the apparent rapidity with which their numbers rebound, it is not so apparent that they have been affected by long-term perturbations, as so many other seabirds apparently have.

There is much unused or underused nesting habitat suitable for this species. In some cases there are very strong clues pointing to why this habitat is vacant. On many islands along the Alaska Peninsula, which have very good-looking tufted puffin nesting habitat and no puffins, there are visible signs of the presence of fox--either fox trails or abandoned trappers' cabins. I also suspect that the brown bear _(Ursa arctos)_ is another possible contributing factor to population declines of burrow nesters along this coast. I have seen brown bears swimming from island to island on foraging expeditions. George J. Divoky (personal communication) has found brown bears visiting Ugaiushak Island, which is 13 km from shore. There are other islands between Ugaiushak and the mainland but the shortest route from shore would require one swim of 7 km. The motivation must be strong.

Tufted puffins may shift from colony to colony. This could be an explanation for apparent local population fluctuation, but if so, I am puzzled by the apparent tenacity with which puffins cling to some sites. Their constant occupancy of sites where the vegetative mat is breakaway tundra (Amundsen 1972) or is underlain by sand results in the destruction of these sites. Tufted puffins often cling to them in spite of the fact that they have been reduced to "slums."

My conclusion is that in spite of their large numbers it appears that tufted puffin populations in the Gulf of Alaska probably have been reduced to a level below that of their undisturbed state.

Conclusions

Seabird numbers in the Gulf of Alaska are not static. Generally, they are probably much less abundant than they were when Bering made his voyage of discovery. There are, nonetheless, considerable numbers of seabirds breeding along the coasts of these waters. Some species show signs of recovery from past insults by man. With enlightened management there is still time to preserve the vast natural heritage that they represent and, in many cases, to improve their status.

In attempting to address a complicated subject in short space and a relatively narrow frame of reference, I have certainly erred a number of times. I would like to see the wealth of new data that will be derived from current work applied to this concept. An understanding of past population fluctuations and the underlying perturbations that they reflect is essential for managers faced with the problem of making good decisions on measures to mitigate the potential adverse impact of development.

References

- American Ornithologists' Union. 1931. Check-list of North American birds, 4th ed. American Ornithologists' Union, Baltimore, Md. 530 pp.
- American Ornithologists' Union. 1957. Check-list of North American birds, 5th ed. American Ornithologists' Union, Baltimore, Md. 691 pp.
- Amundsen, C. C. 1972. Plant ecology of Amchitka Island. Amchitka bio-environmental program. Final Report, Battelle Columbus Lab., Columbus, Ohio. 27 pp.
- Bailey, A. M. 1948. Birds of arctic Alaska. Colo. Mus. Nat. Hist. Pop. Publ. 8. 316 pp.
- Baird, S. F. 1869. On additions to the bird fauna of North America, made by the scientific corps of the Russo-American Telegraph Expedition. Trans. Chic. Acad. Sci. 1(2):311-325.
- Beaglehole, J. C. 1974. The life of Captain James Cook. Stanford Univ. Press, Stanford, Calif. 734 pp.

- Bean, T. H. 1882. Notes on birds collected during the summer of 1880 in Alaska and Siberia. *Proc. U.S. Natl. Mus.* 5:144-173.
- Bédard, J. 1976. Coexistence, coevolution and convergent evolution in seabirds: a comment. *Ecology* 57(1):177-184.
- Belopol'skii, L. O. 1961. Ecology of sea colony birds of the Barents Sea. (Transl. from Russian.) Israel Program for Scientific Translations, Jerusalem. 346 pp.
- Bendire, C. 1895. Notes on the ancient murrelet (*Synthliboramphus antiquus*) by Chase Littlejohn with annotations. *Auk* 12(3):270-278.
- Bent, A. C. 1963. Life histories of North American diving birds. Dover Publications, Inc., New York. 239 pp.
- Bent, A. C. 1964. Life histories of North American petrels, pelicans and their allies. Dover Publications, Inc., New York. 335 pp.
- Binford, L. C., B. G. Elliot, and S. W. Singer. 1975. Discovery of the nest and downy young of the marbled murrelet. *Wilson Bull.* 87(3):303-319.
- Bowles, J. H. 1908. Tapeworm epidemic among Washington seabirds. *Condor* 11:33.
- Cahalane, V. H. 1943. Notes on the Kodiak-Afognak Island group. *Auk* 60(4):536-541.
- Cahalane, V. H. 1944. Birds of the Katmai region, Alaska. *Auk* 61(3):351-375.
- Clark, A. H. 1910. The birds collected and observed during the cruise of the United States Fisheries Steamer "Albatross" in the North Pacific Ocean and in the Bering, Okhotsk, Japan and Eastern seas from April to December 1906. *Proc. U.S. Natl. Mus.* 38:25-74.
- Cody, M. L. 1973. Coexistence, coevolution and convergent evolution in seabirds. *Ecology* 51(1):31-44.
- Coues, E. 1874. Birds of the Northwest. U.S. Geological Survey of the Territories, Misc. Publ. 3. 791 pp.
- Dall, W. H. 1873. Notes on the avifauna of the Aleutian Islands, from Unalaska eastward. *Proc. Calif. Acad. Sci.* 5(1):25-35.
- Dall, W. H. 1874. Notes on the avifauna of the Aleutian Islands, especially those west of Unalaska. *Proc. Calif. Acad. Sci.* 5:270-281.
- Dall, W. H., and H. M. Bannister. 1869. List of the birds of Alaska, with biographical notes. *Trans. Chic. Acad. Sci.* 1(2):267-310.
- Dement'ev, G. P., and N. A. Gladkov, eds. 1966. Birds of the Soviet

Vol. I. (Transl. from Russian.) Israel Program for Scientific Translations, Jerusalem. 553 pp.

Dixon, J. S. 1908. Field notes from Alaska. *Condor* 10:139-143.

East, B. 1943. Seabird cities of the Aleutians. *Nat. Hist.* 51:64-71.

Fisher, J., and R. M. Lockley. 1954. *Seabirds*. William Collins and Sons, London. 320 pp.

Friedmann, H. 1934. Bird bones from Eskimo ruins on St. Lawrence Island. *J. Wash. Acad. Sci.* 24:83-96.

Friedmann, H. 1935. The birds of Kodiak Island, Alaska. *Bull. Chic. Acad. Sci.* 5(3):13-54.

Friedmann, H. 1937. Bird bones from archeological sites in Alaska. *J. Wash. Acad. Sci.* 27:431-438.

Gabrielson, I. N. 1940. America's greatest bird concentrations, Part I. *Bird Lore* 42:497-506.

Gabrielson, I. N. 1941. America's greatest bird concentrations, Part II. *Audubon Mag.* 43:15-23.

Gabrielson, I. N. 1944. Some Alaskan notes. *Auk* 61:105-130, 207-287.

Gabrielson, I. N., and F. C. Lincoln. 1959. *The birds of Alaska*. The Stackpole Company, Harrisburg, Penn. 922 pp.

Golder, F. A. 1925. *Bering's voyages*, Vol. II. American Geographical Society No. 2. 290 pp.

Grinnell, J. 1910. Birds of the 1908 Alexander Alaskan Expedition with a note on the avifaunal relationships of the Prince William Sound district. *Univ. Calif. Publ. Zool.* 5:361-428.

Hanna, G. D. 1916. Records of birds new to the Pribilof Islands, including two new to North America. *Auk* 33:400-403.

Howell, J. C. 1948. Observations on certain birds of the region of Kodiak Island. *Auk* 65:352-358.

Hrdlicka, A. 1945. *The Aleutian and Commander Islands and their inhabitants*. Wistar Institute Anatomical Biology, Philadelphia. 630 pp.

Isleib, M. E., and B. Kessel. 1973. *Birds of the North Gulf Coast-Prince William Sound region, Alaska*. Biol. Pap. Univ. Alaska No. 14. 148 pp.

Jaques, F. L. 1930. Water birds observed on the Arctic Ocean and the Bering Sea in 1928. *Auk* 47:353-366.

Jochelson, W. 1968. *History, ethnology and anthropology of the Aleut*. Carnegie Inst. Wash. Publ. 432. 91 pp.

- Johnson, R. A. 1938. Predation of gulls in murre colonies. *Wilson Bull.* 50(3):161-176.
- Johnson, R. A. 1941. Nesting behavior of the Atlantic murre. *Auk* 58(2):152-163.
- Kozlova, E. V. 1961. Charadriiformes, Suborder Alcae. *Fauna of USSR: Birds* 2:1-140. (Transl. from Russian.) Israel Program for Scientific Translations, Jerusalem. 140 pp.
- Lockley, R. M. 1962. *Puffins*. The Natural History Library, Anchor Books, Doubleday and Company, Inc., Garden City, N. Y. 222 pp.
- Murie, O. J. 1959. *Fauna of the Aleutian Islands and the Alaska Peninsula*. U.S. Fish Wildl. Serv., N. Am. Fauna 61. 406 pp.
- Nelson, E. W. 1887. Report upon natural history collections made in Alaska between the years 1877 and 1881. U.S. Army Signal Corps. Arct. Ser. Pub. 3.
- Nichols, J. T. 1927. Tubinares of the Northwest Coast. *Auk* 44(3):326-328.
- Orth, D. J. 1967. *Dictionary of Alaska place names*. Geol. Surv. Prof. Pap. 567. 1084 pp.
- Palmer, R. S. 1962. *Handbook of North American Birds*. Vol. I. Yale University Press, New Haven, Conn. 567 pp.
- Patten, S. M., Jr. 1976. Sympatry and interbreeding of herring and glaucous-winged gulls in southern Alaska. *Pac. Seabird Group Bull.* 3(1):25-26.
- Pefaur, J. E. 1974. Egg-neglect in the Wilson's storm petrel. *Wilson Bull.* 87(1):16-22.
- Peterson, R. T., and J. Fisher. 1955. *Wild America*. Weather Vane Books, New York. 434 pp.
- Rausch, R. L. 1958. The occurrence and distribution of birds on Middleton Island, Alaska. *Condor* 60:227-242.
- Schlegel, H. 1862-64. *A catalogue of birds in the Dresden Museum of Natural History, Leyden*. Dresden Museum of Natural History, 7 Vols.
- Sowl, L. W., and J. C. Bartonek. 1974. Seabirds--Alaska's most neglected resource. *Trans. N. Am. Wildl. Natl. Resour. Conf.* 39:117-125.
- Spring, L. 1971. A comparison of functional and morphological adaptations in the common murre *_(Uria aalge)_* and thick-billed murre *_(Uria lomvia)_*. *Condor* 73:1-27.
- Stejneger, L. 1885. Results of ornithological explorations in the Commander Islands and in Kamtschatka. *Bull. U.S. Natl. Mus.* 29:1-382.

- Stresemann, E. 1949. Birds collected in the North Pacific area during Captain James Cook's last voyage (1778 and 1779). *Ibis* 91:244-255.
- Swartz, L. G. 1966. Sea-cliff birds. Pages 611-678 _in_ N. J. Wilimovsky and J. N. Wolf, eds. *Environment of the Cape Thomson Region, Alaska*. U.S. Atomic Energy Commission, Oak Ridge, Tenn.
- Thoresen, A. C. 1964. The breeding behavior of the Cassin's auklet. *Condor* 66:456-476.
- Townsend, C. H. 1913. The crested auklet. *Bird-Lore* 15:133-136.
- Tuck, L. M. 1960. *The Murres*. Queen's Printer, Ottawa. 260 pp.
- Turner, L. M. 1885. Notes on the birds of the Near Islands, Alaska. *Auk* 2:154-159.
- Turner, L. M. 1886. Contributions to the natural history of Alaska. Part V, Birds. U.S. Army, Signal Corps, Washington, D.C. Pages 115-196.
- Udvardy, M. D. F. 1963. Zoogeographic study of the Alcidae. Pages 85-111 _in_ J. L. Gressitt, ed. *Pacific Basin biogeography, a symposium*. Pac. Sci. Congr. Proc. 10.
- U.S. Bureau of Sport Fisheries and Wildlife. 1973. Semidi Islands wilderness report. Semidi Islands, National Wildlife Refuge. (Unpublished report)
- U.S. Department of Commerce. 1964. United States Coast Pilot, No. 9, Pacific and Arctic Coasts, Cape Spencer to the Beaufort Sea. Coast and Geodetic Survey, Washington, D.C. 330 pp.
- Walker, E. P. 1923. Definite breeding record for the Aleutian tern in southern Alaska. *Condor* 25:113-117.
- Willet, G. 1914. Birds of Sitka and vicinity, Southeastern Alaska. *Condor* 16:71-91.
- Willet, G. 1918. Bird notes from Forrester Island, Alaska. *Condor* 20:85.
- Williamson, F. S. L., and L. S. Peyton. 1963. Interbreeding of glaucous-winged herring gulls in the Cook Inlet Region, Alaska. *Condor* 65:28.

THE NEW ASTRONOMY

Project Gutenberg's *Man's Place in the Universe*, by Alfred R. Wallace

During the latter half of the nineteenth century discoveries were made which extended the powers of astronomical research into entirely new and

unexpected regions, comparable to those which were opened up by the discovery of the telescope more than two centuries before. The older astronomy for more than two thousand years was purely mechanical and mathematical, being limited to observation and measurement of the apparent motions of the heavenly bodies, and the attempts to deduce, from these apparent motions, their real motions, and thus determine the actual structure of the solar system. This was first done when Kepler established his three celebrated laws; and later, when Newton showed that these laws were necessary consequences of the one law of gravitation, and when succeeding observers and mathematicians proved that each fresh irregularity in the motions of the planets was explicable by a more thorough and minute application of the same laws, this branch of astronomy reached its highest point of efficiency and left very little more to be desired.

Then, as the telescope became successively improved, the centre of interest was shifted to the surfaces of the planets and their satellites, which were watched and scrutinised with the greatest assiduity in order if possible to attain some amount of knowledge of their physical constitution and past history. A similar minute scrutiny was given to the stars and nebulae, their distribution and grouping, and the whole heavens were mapped out, and elaborate catalogues constructed by enthusiastic astronomers in every part of the world. Others devoted themselves to the immensely difficult problem of determining the distances of the stars, and by the middle of the century a few such distances had been satisfactorily measured.

Thus, up to the middle of the nineteenth century it appeared likely that the future of astronomy would rest almost entirely on the improvement of the telescope, and of the various instruments of measurement by means of which more accurate determinations of distances might be obtained. Indeed, the author of the Positive Philosophy, Auguste Comte, felt so sure of this that he deprecated all further attention to the stars as pure waste of time that could never lead to any useful or interesting result. In his *Philosophical Treatise on Popular Astronomy* published in 1844, he wrote very strongly on this point. He there tells us that, as the stars are only accessible to us by sight they must always remain very imperfectly known. We can know little more than their mere existence. Even as regards so simple a phenomenon as their temperature this must always be inappreciable to a purely visual examination. Our knowledge of the stars is for the most part purely negative, that is, we can determine only that they do *not* belong to our system. Outside that system there exists, in astronomy, only obscurity and confusion, for want of indispensable facts; and he concludes thus:--'It is, then, in vain that for half a century it has been endeavoured to distinguish two astronomies, the one solar the other sidereal. In the eyes of those for whom science consists of real laws and not of incoherent facts, the second exists only in name, and the first alone constitutes a true astronomy; and I am not afraid to assert that it will always be so.' And he adds that--'all efforts directed to this subject for half a century have only produced an accumulation of incoherent empirical facts which can only interest an irrational curiosity.'

Seldom has a confident assertion of finality in science received so crushing a reply as was given to the above statements of Comte by the discovery in 1860 (only three years after his death) of the method of spectrum-analysis which, in its application to the stars, has revolutionised astronomy, and has enabled us to obtain that very kind of knowledge which he declared must be for ever beyond our reach. Through it

we have acquired accurate information as to the physics and chemistry of the stars and nebulae, so that we now know really more of the nature, constitution, and temperature of the enormously distant suns which we distinguish by the general term stars, than we do of most of the planets of our own system. It has also enabled us to ascertain the existence of numerous invisible stars, and to determine their orbits, their rate of motion, and even, approximately, their mass. The despised stellar astronomy of the early part of the century has now taken rank as the most profoundly interesting department of that grand science, and the branch which offers the greatest promise of future discoveries. As the results obtained by means of this powerful instrument will often be referred to, a short account of its nature and of the principles on which it depends must here be given.

The solar spectrum is the band of coloured light seen in the rainbow and, partially, in the dew-drop, but more completely when a ray of sunlight passes through a prism--a piece of glass having a triangular section. The result is, that instead of a spot of white light we have a narrow band of brilliant colours which succeed each other in regular order, from violet at one end through blue, green, and yellow to red at the other. We thus see that light is not a simple and uniform radiation from the sun, but is made up of a large number of separate rays, each of which produces in our eyes the sensation of a distinct colour. Light is now explained as being due to vibrations of ether, that mysterious substance which not only permeates all matter, but which fills space at least as far as the remotest of the visible stars and nebulae. The exceedingly minute waves or vibrations of the ether produce all the phenomena of heat, light, and colour, as well as those chemical actions to which photography owes its wonderful powers. By ingenious experiments the size and rate of vibration of these waves have been measured, and it is found that they vary considerably, those forming the red light, which is least refracted, having a wave-length of about $1/326000$ of an inch, while the violet rays at the other end of the spectrum are only about half that length or $1/630000$ of an inch. The rate at which the vibrations succeed each other is from 302 millions of millions per second for the extreme red rays, to 737 millions of millions for those at the violet end of the spectrum. These figures are given to show the wonderful minuteness and rapidity of these heat and light waves on which the whole life of the world, and all our knowledge of other worlds and other suns, directly depends.

But the mere colours of the spectrum are not the most important part of it. Very early in the nineteenth century a close examination showed that it was everywhere crossed by black lines of various thicknesses, sometimes single, sometimes grouped together. Many observers studied them and made accurate drawings or maps showing their positions and thicknesses, and by combining several prisms, so that the beam of sunlight had to pass through them successively, a spectrum could be produced several feet long, and more than 3000 of these dark lines were counted in it. But what they were and how they were caused remained a mystery, till, in the year 1860, the German physicist Kirchhoff discovered the secret and gave to chemists and astronomers a new and quite unexpected engine of research.

It had already been observed that the chemical elements and various compounds, when heated to incandescence, produced spectra consisting of coloured lines or bands which were constant for each element, so that the elements could at once be recognised by their characteristic spectra; and it had also been noticed that some of these bands, especially the yellow

band produced by sodium, corresponded in position with certain black lines in the solar spectrum. Kirchhoff's discovery consisted in showing that, when the light from an incandescent body passes through the same substance in a state of vapour or gas, so much of the light is absorbed that the coloured lines or bands become black. The mystery of more than half a century was thus solved; and the thousands of black lines in the solar spectrum were shown to be caused by the light from the incandescent matter of the sun's surface passing through the heated gases or vapours immediately above it, and thereby having the bright coloured lines of their spectra changed, by absorption, to comparative blackness.

Chemists and physicists immediately set to work examining the spectra of the elements, fixing the position of the several coloured lines or bands by accurate measurement, and comparing them with the dark lines of the solar spectrum. The results were in the highest degree satisfactory. In a large proportion of the elements the coloured bands corresponded exactly with a group of dark lines in the spectrum of the sun, in which, therefore, the same terrestrial elements were proved to exist. Among the elements first detected in this manner were hydrogen, sodium, iron, copper, magnesium, zinc, calcium, and many others. Nearly forty of the elements have now been found in the sun, and it seems highly probable that all our elements really exist there, but as some are very rare and are present in very minute quantities they cannot be detected. Some of the dark lines in the sun were found not to correspond to any known element, and as this was thought to indicate an element peculiar to the sun it was named Helium; but quite recently it has been discovered in a rare mineral. Many of the elements are represented by a great number of lines, others by very few. Thus iron has more than 2000, while lead and potassium have only one each.

The value of the spectroscope both to the chemist in discovering new elements and to the astronomer in determining the constitution of the heavenly bodies, is so great, that it became of the highest importance to have the position of all the dark lines in the solar spectrum, as well as the bright lines of all the elements, determined with extreme accuracy, so as to be able to make exact comparisons between different spectra. At first this was done by means of very large-scale drawings showing the exact position of every dark or bright line. But this was found to be both inconvenient and not sufficiently exact; and it was therefore agreed to adopt the natural scale of the wave-lengths of the different parts of the spectrum, which by means of what are termed diffraction-gratings can now be measured with great accuracy. Diffraction-gratings are formed of a polished surface of hard metal ruled with excessively fine lines, sometimes as many as 20,000 to an inch. When sunlight falls upon one of these gratings it is reflected, and by interference of the rays from the spaces between the fine grooves, it is spread out into a beautiful and well-defined spectrum, which, when the lines are very close, is several yards in length. In these diffraction spectra many dark lines are seen which can be shown in no other way, and they also give a spectrum which is far more uniform than that produced by glass prisms in which minute differences in the composition of the glass cause some rays to be refracted more and others less than the normal amount.

The spectra produced by diffraction-gratings are double; that is, they are spread out on both sides of the central line of the ray which remains white, and the several coloured or dark lines are so clearly defined that they can be thrown on a screen at a considerable distance, giving a great length to the spectrum. The data for obtaining the wave-lengths are the

distance apart of the lines, the distance of the screen, and the distance apart of the first pair of dark lines on each side of the central bright line. All these can be measured with extreme accuracy by means of telescopes with micrometers and other contrivances, and the result is an accuracy of determination of wave-lengths which can probably not be equalled in any other kind of measurement.

As the wave-lengths are so excessively minute, it has been found convenient to fix upon a still smaller unit of measurement, and as the millimetre is the smallest unit of the metric system, the ten-millionth of a millimetre (technically termed 'tenth meter') is the unit adopted for the measurement of wave-lengths, which is equal to about the 250 millionth of an inch. Thus the wave-lengths of the red and blue lines characteristic of hydrogen are 6563.07 and 4861.51 respectively. This excessively minute scale of wave-lengths, once determined by the most refined measurement, is of very great importance. Having the wave-lengths of any two lines of a spectrum so determined, the space between them can be laid down on a diagram of any length, and all the lines that occur in any other spectrum between these two lines can be marked in their exact relative positions. Now, as the visible spectrum consists of about 300,000 rays of light, each of different wave-lengths and therefore of different refrangibilities, if it is laid down on such a scale as to be of a length of 3000 inches (250 feet), each wave-length will be 1/100 of an inch long, a space easily visible by the naked eye.

The possession of an instrument of such wonderful delicacy, and with powers which enable it to penetrate into the inner constitution of the remotest orbs of space, rendered it possible, within the next quarter of a century, to establish what is practically a new science--Astrophysics--often popularly termed the New Astronomy. A brief outline of the main achievements of this science must now be given.

The first great discovery made by Spectrum analysis, after the interpretation of the sun's spectrum had been obtained, was, the real nature of the fixed stars. It is true they had long been held by astronomers to be suns, but this was only an opinion of the accuracy of which it did not seem possible to obtain any proof. The opinion was founded on two facts--their enormous distance from us, so great that the whole diameter of the earth's orbit did not lead to any apparent change of their relative positions, and their intense brilliancy which at such distances could only be due to an actual size and splendour comparable with our sun. The spectroscope at once proved the correctness of this opinion. As one after another was examined, they were found to exhibit spectra of the same general type as that of the sun--a band of colours crossed by dark lines. The very first stars examined by Sir William Huggins showed the existence of nine or ten of our elements. Very soon all the chief stars of the heavens were spectroscopically examined, and it was found that they could be classed in three or four groups. The first and largest group contains more than half the visible stars, and a still larger proportion of the most brilliant, such as Sirius, Vega, Regulus, and Alpha Crucis in the Southern Hemisphere. They are characterised by a white or bluish light, rich in the ultra-violet rays, and their spectra are distinguished by the breadth and intensity of the four dark bands due to the absorption of hydrogen, while the various black lines which indicate metallic vapours are comparatively few, though hundreds of them can be discovered by careful examination.

The next group, to which Capella and Arcturus belong, is also very

numerous, and forms the solar type of stars. Their light is of a yellowish colour, and their spectra are crossed throughout by innumerable fine dark lines more or less closely corresponding with those in the solar spectrum.

The third group consists of red and variable stars, which are characterised by fluted spectra. Such spectra show like a range of Doric columns seen in perspective, the red side being that most illuminated.

The last group, consisting of few and comparatively small stars, has also fluted spectra, but the light appears to come from the opposite direction.

These groups were established by Father Secchi, the Roman astronomer, in 1867, and have been adopted with some modifications by Vogel of the Astrophysical Observatory at Potsdam. The exact interpretation of these different spectra is somewhat uncertain, but there can be little doubt that they coincide primarily with differences of temperature and with corresponding differences in the composition and extent of the absorptive atmospheres. Stars with fluted spectra indicate the presence of vapours of the metalloids or of compound substances, while the reversed flutings indicate the presence of carbon. These conclusions have been reached by careful laboratory experiments which are now carried on at the same time as the spectral examination of the stars and other heavenly bodies, so that each peculiarity of their spectra, however puzzling and apparently unmeaning, has been usually explained, by being shown to indicate certain conditions of chemical constitution or of temperature.

But whatever difficulty there may be in explaining details, there remains no doubt whatever of the fundamental fact that all the stars are true suns, differing no doubt in size, and their stage of development as indicated by the colour or intensity of their light or heat, but all alike possessing a photosphere or light-emitting surface, and absorptive atmospheres of various qualities and density.

Innumerable other details, such as the often contrasted colours of double stars, the occasional variability of their spectra, their relations to the nebulae, the various stages of their development and other problems of equal interest, have occupied the continued attention of astronomers, spectroscopists, and chemists; but further reference to these difficult questions would be out of place here. The present sketch of the nature of spectrum-analysis applied to the stars is for the purpose of making its principle and method of observation intelligible to every educated reader, and to illustrate the marvellous precision and accuracy of the results attained by it. So confident are astronomers of this accuracy that nothing less than _perfect correspondence_ of the various bright lines in the spectrum of an element in the laboratory with the dark lines in the spectrum of the sun or of a star is required before the presence of that element is accepted as proved. As Miss Clerke tersely puts it--'Spectroscopic coincidences admit of no compromise. Either they are absolute or they are worthless.'

MEASUREMENT OF MOTION IN THE LINE OF SIGHT

We must now describe another and quite distinct application of the spectroscope, which is even more marvellous than that already described. It is the method of measuring the rate of motion of any of the visible heavenly bodies in a direction either directly towards us, or directly away

from us, technically described as 'radial motion,' or by the expression--'in the line of sight.' And the extraordinary thing is that this power of measurement is altogether independent of distance, so that the rate of motion in miles per second of the remotest of the fixed stars, if sufficiently bright to show a distinct spectrum, can be measured with as much certainty and accuracy as in the case of a much nearer star or a planet.

In order to understand how this is possible we have again to refer to the wave-theory of light; and the analogy of other wave-motions will enable us better to grasp the principle on which these calculations depend. If on a nearly calm day we count the waves that pass each minute by an anchored steamboat, and then travel in the direction the waves come from, we shall find that a larger number pass us in the same time. Again, if we are standing near a railway, and an engine comes towards us whistling, we shall notice that it changes its tone as it passes us; and as it recedes the sound will be in a lower key, although the engine may be at exactly the same distance from us as when it was approaching. Yet the sound does not change to the ear of the engine driver, the cause of the change being that the sound-waves reach us in quicker succession as the source of the waves is approaching us than when it is retreating from us. Now, just as the pitch of a note depends upon the rapidity with which the successive air-vibrations reach our ear, so does the colour of a particular part of the spectrum depend upon the rapidity with which the ethereal waves which produce colour reach our eyes; and as this rapidity is greater when the source of the light is approaching than when it is receding from us, a slight shifting of the position of the coloured bands, and therefore of the dark lines, will occur, as compared with their position in the spectrum of the sun or of any stationary source of light, if there is any motion sufficient in amount to produce a perceptible shift.

That such a change of colour would occur was pointed out by Professor Doppler of Prague in 1842, and it is hence usually spoken of as the 'Doppler principle'; but as the changes of colour were so minute as to be impossible of measurement it was not at that time of any practical importance in astronomy. But when the dark lines in the spectrum were carefully mapped, and their positions determined with minute accuracy, it was seen that a means of measuring the changes produced by motion in the line of sight existed, since the position of any of the dark or coloured lines in the spectra of the heavenly bodies could be compared with those of the corresponding lines produced artificially in the laboratory. This was first done in 1868 by Sir William Huggins, who, by the use of a very powerful spectroscope constructed for the purpose, found that such a change did occur in the case of many stars, and that their rate of motion towards us or away from us--the radial motion--could be calculated. As the actual distance of some of these stars had been measured, and their change of position annually (their proper motion) determined, the additional factor of the amount of motion in the direction of our line of sight completed the data required to fix their true line of motion among the other stars. The accuracy of this method under favourable conditions and with the best instruments is very great, as has been proved by those cases in which we have independent means of calculating the real motion. The motion of Venus towards or away from us can be calculated with great accuracy for any period, being a resultant of the combined motions of the planet and of our earth in their respective orbits. The radial motions of Venus were determined at the Lick Observatory in August and September 1890, by spectroscopic observations, and also by calculation, to be as follows:--

By Observation.

By Calculation.

Aug. 16th.	7.3 miles per second.	8.1 miles per second.
" 22nd.	8.9 " " "	8.2 " " "
" 30th.	7.3 " " "	8.3 " " "
Sep. 3rd.	8.3 " " "	8.3 " " "
" 4th.	8.2 " " "	8.3 " " "

showing that the maximum error was only one mile per second, while the mean error was about a quarter of a mile. In the case of the stars the accuracy of the method has been tested by observations of the same star at times when the earth's motion in its orbit is towards or away from the star, whose apparent radial velocity is, therefore, increased or diminished by a known amount. Observations of this kind were made by Dr. Vogel, Director of the Astrophysical Observatory at Potsdam, showing, in the case of three stars, of which ten observations were taken, a mean error of about two miles per second; but as the stellar motions are more rapid than those of the planets, the proportionate error is no greater than in the example given above.

The great importance of this mode of determining the real motion of the stars is, that it gives us a knowledge of the scale on which such motions are progressing; and when in the course of time we discover whether any of their paths are rectilinear or curved, we shall be in a position to learn something of the nature of the changes that are going on and of the laws on which they depend.

INVISIBLE STARS AND IMPERCEPTIBLE MOTIONS

But there is another result of this power of determining radial motion which is even more unexpected and marvellous, and which has extended our knowledge of the stars in quite a new direction. By its means it is possible to determine the existence of invisible stars and to measure the rate of otherwise imperceptible motions; that is of stars which are invisible in the most powerful modern telescopes, and whose motions have such a limited range that no telescope can detect them.

Double or binary stars forming systems which revolve around their common centre of gravity were discovered by Sir William Herschel, and very great numbers are known; but in most cases their periods of revolution are long, the shortest being about twelve years, while many extend to several hundred years. These are, of course, all visible binaries, but many are now known of which one star only is visible while the other is either non-luminous or is so close to its companion that they appear as a single star in the most powerful telescopes. Many of the variable stars belong to the former class, a good example of which is Algol in the constellation Perseus, which changes from the second to the fourth magnitude in about four and a half hours, and in about four and a half hours more regains its brilliancy till its next period of obscuration which occurs regularly every two days and twenty-one hours. The name Algol is from the Arabic Al Ghoul, the familiar 'ghoul' of the Arabian Nights, so named--'The Demon'--from its strange and weird behaviour.

It had long been conjectured that this obscuration was due to a dark companion which partially eclipsed the bright star at every revolution,

showing that the plane of the orbit of the pair was almost exactly directed towards us. The application of the spectroscope made this conjecture a certainty. At an equal time before and after the obscuration, motion in the line of sight was shown, towards and away from us, at a rate of twenty-six miles per second. From these scanty data and the laws of gravitation which fix the period of revolution of planets at various distances from their centres of revolution, Professor Pickering of the Harvard Observatory was able to arrive at the following figures as highly probable, and they may be considered to be certainly not far from the truth.

Diameter of Algol,	1,061,000 miles.
Diameter of dark companion,	830,000 "
Distance between their centres,	3,230,000 "
Orbital speed of Algol,	26.3 miles per sec.
Orbital speed of companion,	55.4 " " "
Mass of Algol,	4/9 mass of our Sun.
Mass of companion,	2/9 " " "

When it is considered that these figures relate to a pair of stars only one of which has ever been seen, that the orbital motion even of the visible star cannot be detected in the most powerful telescopes, when, further, we take into account the enormous distance of these objects from us, the great results of spectroscopic observation will be better appreciated.

But besides the marvel of such a discovery by such simple means, the facts discovered are themselves in the highest degree marvellous. All that we had known of the stars through telescopic observation indicated that they were at very great distances from each other however thickly they may appear scattered over the sky. This is the case even with close telescopic double stars, owing to their enormous remoteness from us. It is now estimated that even stars of the first magnitude are, on a general average, about eighty millions of millions of miles distant; while the closest double stars that can be distinctly separated by large telescopes are about half a second apart. These, if at the above distance, will be about 1500 millions of miles from each other. But in the case of Algol and its companion, we have two bodies both larger than our sun, yet with a distance of only 2-1/4 millions of miles between their surfaces, a distance not much exceeding their combined diameters. We should not have anticipated that such huge bodies could revolve so closely to each other, and as we now know that the neighbourhood of our sun--and probably of all suns--is full of meteoric and cometic matter, it would seem probable that in the case of two suns so near together the quantity of such matter would be very great, and would lead probably by continued collisions to increase of their bulk, and perhaps to their final coalescence into a single giant orb. It is said that a Persian astronomer in the tenth century calls Algol a red star, while it is now white or somewhat yellowish. This would imply an increase of temperature caused by collisions or friction, and increasing proximity of the pair of stars.

A considerable number of double stars with dark companions have been discovered by means of the spectroscope, although their motion is not directly in the line of sight, and therefore there is no obscuration. In order to discover such pairs the spectra of large numbers of stars are taken on photographic plates every night and for considerable periods--for a year or for several years. These plates are then carefully examined with a high magnifying power to discover any periodical displacement of the lines, and it is astonishing in how large a number of cases this has been

found to exist and the period of revolution of the pair determined.

But besides discovering double stars of which one is dark and one bright, many pairs of bright stars have been discovered by the same means. The method in this case is rather different. Each component star, being luminous, will give a separate spectrum, and the best spectroscopes are so powerful that they will separate these spectra when the stars are at their maximum distance although no telescope in existence, or ever likely to be made, can separate the component stars. The separation of the spectra is usually shown by the most prominent lines becoming double and then after a time single, indicating that the plane of revolution is more or less obliquely towards us, so that the two stars if visible would appear to open out and then get nearer together every revolution. Then, as each star alternately approaches and recedes from us the radial velocity of each can be determined, and this gives the relative mass. In this way not only doubles, but triple and multiple systems, have been discovered. The stars proved to be double by these two methods are so numerous that it has been estimated by one of the best observers that about one star in every thirteen shows inequality in its radial motion and is therefore really a double star.

THE NEBULÆ

One other great result of spectrum-analysis, and in some respects perhaps the greatest, is its demonstration of the fact that true nebulæ exist, and that they are not all star-clusters so remote as to be irresolvable, as was once supposed. They are shown to have gaseous spectra, or sometimes gaseous and stellar spectra combined, and this, in connection with the fact that nebulæ are frequently aggregated around nebulous stars or groups of stars, renders it certain that the nebulæ are in no way separated in space from the stars, but that they constitute essential parts of one vast stellar universe. There is, indeed, good reason to believe that they are really the material out of which stars are made, and that in their forms, aggregations, and condensations, we can trace the very process of evolution of stars and suns.

PHOTOGRAPHIC ASTRONOMY

But there is yet another powerful engine of research which the new astronomy possesses, and which, either alone or in combination with the spectroscope, had produced and will yet produce in the future an amount of knowledge of the stellar universe which could never be attained by any other means. It has already been stated how the discovery of new variable and binary stars has been rendered possible by the preservation of the photographic plates on which the spectra are self-recorded, night after night, with every line, whether dark or coloured, in true position, so as to bear magnification, and, by comparison with others of the series, enabling the most minute changes to be detected and their amount accurately measured. Without the preservation of such comparable records, which is in no other way possible, by far the larger portion of spectroscopic discoveries could never have been made.

But there are two other uses of photography of quite a different nature which are equally and perhaps in their final outcome may be far more important. The first is, that by the use of the photographic plate the

exact positions of scores, hundreds, or even thousands of stars can be self-mapped simultaneously with extreme accuracy, while any number of copies can be made of these star-maps. This entirely obviates the necessity for the old method of fixing the position of each star by repeated measurement by means of very elaborate instruments, and their registration in laborious and expensive catalogues. So important is this now seen to be, that specially constructed cameras are made for stellar photography, and by means of the best kinds of equatorial mounting are made to revolve slowly so that the image of each star remains stationary upon the plate for several hours.

Arrangements have been now made among all the chief observatories of the world to carry out a photographic survey of the heavens with identical instruments, so as to produce maps of the whole star-system on the same scale. These will serve as fixed data for future astronomers, who will thus be able to determine the movements of stars of all magnitudes with a certainty and accuracy hitherto unattainable.

The other important use of photography depends upon the fact that with a longer exposure within certain limits we increase the light-collecting power. It will surprise many persons to learn that an ordinary good portrait-camera with a lens three or four inches in diameter, if properly mounted so that an exposure of several hours can be made, will show stars so minute that they are invisible even in the great Lick telescope. In this way the camera will often reveal double-stars or small groups which can be made visible in no other way.

Such photographs of the stars are now constantly reproduced in works on Astronomy and in popular magazine articles, and although some of them are very striking, many persons are disappointed with them, and cannot understand their great value, because each star is represented by a white circle often of considerable size and with a somewhat undefined outline, not by a minute point of light as stars appear in a good telescope. But the essential matter in all such photographs is not so much the smallness, as the roundness, of the star-images, as this proves the extreme precision with which the image of every star has been kept by the clockwork motion of the instrument on the same point of the plate during the whole exposure. For example, in the fine photograph of the Great Nebula in Andromeda, taken 29th December 1888, by Dr. Isaac Roberts, with an exposure of four hours, there are probably over a thousand stars large and small to be seen, every one represented by an almost exactly circular white dot of a size dependent on the magnitude of the star. These round dots can be bisected by the cross hairs of a micrometer with very great accuracy, and thus the distance between the centres of any of the pairs, as well as the direction of the line joining their centres, can be determined as accurately as if each was represented by a point only. But as a minute white speck would be almost invisible on the maps, and would convey no information as to the approximate magnitude of the star, mistakes would be much more easily made, and it would probably be found necessary to surround each star with a circle to indicate its magnitude, and to enable it to be easily seen. It is probable, therefore, that the supposed defect is really an important advantage. The above-mentioned photograph is beautifully reproduced in Proctor's *Old and New Astronomy*, published after his greatly lamented death.

But besides the amount of altogether new knowledge obtained by the methods of research here briefly explained, a great deal of light has been thrown

on the distribution of the stars as a whole, and hence on the nature and extent of the stellar universe, by a careful study of the materials obtained by the old methods, and by the application of the doctrine of probabilities to the observed facts. In this way alone some very striking results have been reached, and these have been supported and strengthened by the newer methods, and also by the use of new instruments in the measurement of stellar distances. Some of these results bear so closely and directly upon the special subject of the present volume, that our next chapter must be devoted to a consideration of them.

NEVADA FORESTS

The Project Gutenberg EBook of Steep Trails, by John Muir

When the traveler from California has crossed the Sierra and gone a little way down the eastern flank, the woods come to an end about as suddenly and completely as if, going westward, he had reached the ocean. From the very noblest forests in the world he emerges into free sunshine and dead alkaline lake-levels. Mountains are seen beyond, rising in bewildering abundance, range beyond range. But however closely we have been accustomed to associate forests and mountains, these always present a singularly barren aspect, appearing gray and forbidding and shadeless, like heaps of ashes dumped from the blazing sky.

But wheresoever we may venture to go in all this good world, nature is ever found richer and more beautiful than she seems, and nowhere may you meet with more varied and delightful surprises than in the byways and recesses of this sublime wilderness--lovely asters and abronias on the dusty plains, rose-gardens around the mountain wells, and resiny woods, where all seemed so desolate, adorning the hot foothills as well as the cool summits, fed by cordial and benevolent storms of rain and hail and snow; all of these scant and rare as compared with the immeasurable exuberance of California, but still amply sufficient throughout the barest deserts for a clear manifestation of God's love.

Though Nevada is situated in what is called the "Great Basin," no less than sixty-five groups and chains of mountains rise within the bounds of the State to a height of about from eight thousand to thirteen thousand feet above the level of the sea, and as far as I have observed, every one of these is planted, to some extent, with coniferous trees, though it is only upon the highest that we find anything that may fairly be called a forest. The lower ranges and the foothills and slopes of the higher are roughened with small scrubby junipers and nut pines, while the dominating peaks, together with the ridges that swing in grand curves between them, are covered with a closer and more erect growth of pine, spruce, and fir, resembling the forests of the Eastern States both as to size and general botanical characteristics. Here is found what is called the heavy timber, but the tallest and most fully developed sections of the forests, growing down in sheltered hollows on moist moraines, would be regarded in California only as groves of saplings, and so, relatively, they are, for by careful calculation we find that more than a thousand of these trees would be required to furnish as much timber as may be obtained from a single specimen of our Sierra giants.

The height of the timberline in eastern Nevada, near the middle of the Great Basin, is about eleven thousand feet above sea level; consequently the forests, in a dwarfed, storm-beaten condition, pass over the summits of nearly every range in the State, broken here and there only by mechanical conditions of the surface rocks. Only three mountains in the State have as yet come under my observation whose summits rise distinctly above the treeline. These are Wheeler's Peak, twelve thousand three hundred feet high, Mount Moriah, about twelve thousand feet, and Granite Mountain, about the same height, all of which are situated near the boundary line between Nevada and Utah Territory.

In a rambling mountaineering journey of eighteen hundred miles across the state, I have met nine species of coniferous trees,--four pines, two spruces, two junipers, and one fir,--about one third the number found in California. By far the most abundant and interesting of these is the *Pinus Fremontiana*, [18] or nut pine. In the number of individual trees and extent of range this curious little conifer surpasses all the others combined. Nearly every mountain in the State is planted with it from near the base to a height of from eight thousand to nine thousand feet above the sea. Some are covered from base to summit by this one species, with only a sparse growth of juniper on the lower slopes to break the continuity of these curious woods, which, though dark-looking at a little distance, are yet almost shadeless, and without any hint of the dark glens and hollows so characteristic of other pine woods. Tens of thousands of acres occur in one continuous belt. Indeed, viewed comprehensively, the entire State seems to be pretty evenly divided into mountain ranges covered with nut pines and plains covered with sage--now a swath of pines stretching from north to south, now a swath of sage; the one black, the other gray; one severely level, the other sweeping on complacently over ridge and valley and lofty crowning dome.

The real character of a forest of this sort would never be guessed by the inexperienced observer. Traveling across the sage levels in the dazzling sunlight, you gaze with shaded eyes at the mountains rising along their edges, perhaps twenty miles away, but no invitation that is at all likely to be understood is discernible. Every mountain, however high it swells into the sky, seems utterly barren. Approaching nearer, a low brushy growth is seen, strangely black in aspect, as though it had been burned. This is a nut pine forest, the bountiful orchard of the red man. When you ascend into its midst you find the ground beneath the trees, and in the openings also, nearly naked, and mostly rough on the surface--a succession of crumbling ledges of lava, limestones, slate, and quartzite, coarsely strewn with soil weathered from them. Here and there occurs a bunch of sage or *linosyris*, or a purple aster, or a tuft of dry bunch-grass.

The harshest mountainsides, hot and waterless, seem best adapted to the nut pine's development. No slope is too steep, none too dry; every situation seems to be gratefully chosen, if only it be sufficiently rocky and firm to afford secure anchorage for the tough, grasping roots. It is a sturdy, thickset little tree, usually about fifteen feet high when full grown, and about as broad as high, holding its knotty branches well out in every direction in stiff zigzags, but turning them gracefully upward at the ends in rounded bosses. Though making so dark a mass in the distance, the foliage is a pale grayish green, in stiff, awl-shaped fascicles. When examined closely these round needles seem

inclined to be two-leaved, but they are mostly held firmly together, as if to guard against evaporation. The bark on the older sections is nearly black, so that the boles and branches are clearly traced against the prevailing gray of the mountains on which they delight to dwell.

The value of this species to Nevada is not easily overestimated. It furnishes fuel, charcoal, and timber for the mines, and, together with the enduring juniper, so generally associated with it, supplies the ranches with abundance of firewood and rough fencing. Many a square mile has already been denuded in supplying these demands, but, so great is the area covered by it, no appreciable loss has as yet been sustained. It is pretty generally known that this tree yields edible nuts, but their importance and excellence as human food is infinitely greater than is supposed. In fruitful seasons like this one, the pine nut crop of Nevada is, perhaps, greater than the entire wheat crop of California, concerning which so much is said and felt throughout the food markets of the world.

The Indians alone appreciate this portion of Nature's bounty and celebrate the harvest home with dancing and feasting. The cones, which are a bright grass-green in color and about two inches long by one and a half in diameter, are beaten off with poles just before the scales open, gathered in heaps of several bushels, and lightly scorched by burning a thin covering of brushwood over them. The resin, with which the cones are bedraggled, is thus burned off, the nuts slightly roasted, and the scales made to open. Then they are allowed to dry in the sun, after which the nuts are easily thrashed out and are ready to be stored away. They are about half an inch long by a quarter of an inch in diameter, pointed at the upper end, rounded at the base, light brown in general color, and handsomely dotted with purple, like birds' eggs. The shells are thin, and may be crushed between the thumb and finger. The kernels are white and waxy-looking, becoming brown by roasting, sweet and delicious to every palate, and are eaten by birds, squirrels, dogs, horses, and man. When the crop is abundant the Indians bring in large quantities for sale; they are eaten around every fireside in the State, and oftentimes fed to horses instead of barley.

Looking over the whole continent, none of Nature's bounties seems to me so great as this in the way of food, none so little appreciated. Fortunately for the Indians and wild animals that gather around Nature's board, this crop is not easily harvested in a monopolizing way. If it could be gathered like wheat the whole would be carried away and dissipated in towns, leaving the brave inhabitants of these wilds to starve.

Long before the harvest time, which is in September and October, the Indians examine the trees with keen discernment, and inasmuch as the cones require two years to mature from the first appearance of the little red rosettes of the fertile flowers, the scarcity or abundance of the crop may be predicted more than a year in advance. Squirrels, and worms, and Clarke crows, make haste to begin the harvest. When the crop is ripe the Indians make ready their long beating-poles; baskets, bags, rags, mats, are gotten together. The squaws out among the settlers at service, washing and drudging, assemble at the family huts; the men leave their ranch work; all, old and young, are mounted on ponies, and set off in great glee to the nut lands, forming cavalcades curiously picturesque. Flaming scarfs and calico skirts stream loosely over the

knotty ponies, usually two squaws astride of each, with the small baby midgets bandaged in baskets slung on their backs, or balanced upon the saddle-bow, while the nut baskets and water jars project from either side, and the long beating-poles, like old-fashioned lances, angle out in every direction.

Arrived at some central point already fixed upon, where water and grass is found, the squaws with baskets, the men with poles, ascend the ridges to the laden trees, followed by the children; beating begins with loud noise and chatter; the burs fly right and left, lodging against stones and sagebrush; the squaws and children gather them with fine natural gladness; smoke columns speedily mark the joyful scene of their labors as the roasting fires are kindled; and, at night, assembled in circles, garrulous as jays, the first grand nut feast begins. Sufficient quantities are thus obtained in a few weeks to last all winter.

The Indians also gather several species of berries and dry them to vary their stores, and a few deer and grouse are killed on the mountains, besides immense numbers of rabbits and hares; but the pine-nuts are their main dependence--their staff of life, their bread.

Insects also, scarce noticed by man, come in for their share of this fine bounty. Eggs are deposited, and the baby grubs, happy fellows, find themselves in a sweet world of plenty, feeding their way through the heart of the cone from one nut chamber to another, secure from rain and wind and heat, until their wings are grown and they are ready to launch out into the free ocean of air and light.

NEW JERSEY

Project Gutenberg's *Beautiful Gardens in America*, by Louise Shelton

It would take much time and long travel to discover the State possessing the greatest number of fine gardens, but there is little risk of misstatement in placing New Jersey as fourth or fifth on the list; New York, including Long Island, in the lead, then Massachusetts, and possibly Pennsylvania or California next. Near the sea the climate is, of course, an especial incentive to flower-growing, and along the Jersey coast, especially in Monmouth County, there are numerous gardens. Many excellent specimens are to be seen at Princeton, Trenton, Short Hills, and Morristown, as well as in the country around Bernardsville, in all of which places garden clubs are rapidly developing the cult. Only about fifty miles separate Trenton, Princeton, and Monmouth Beach, in central Jersey, from Morristown, Short Hills, etc., at the north, so that spring gardens practically begin in both sections at the same time, with possibly not more than three or four days' difference between them. While the south Jersey soil does not always encourage gardening, the northern half of the State may be considered on the whole quite fertile, and the summer temperature is not too hot for flowers. Occasional droughts are to be expected, but the water-supply is usually adequate. In the northern part of the State the usual date for Crocuses is March 25; Daffodils, April 15; Lily-of-the-Valley, May 12; late Tulips, May 10; German Iris, May 22; Oriental Poppy, Columbine, Lupin, and Pyrethrum, May 26; Roses, Peonies, Anchusa, and Sweet William, early

June; Delphiniums, June 20; Hollyhocks, July 1. In fact, the climatic condition, as it affects plant life, is very similar throughout the region surrounding New York City--not different enough to require special attention.

The beautiful garden at Glen Alpine is one of prolonged bloom from May 22 until frost, and its planting plans are shown in the author's "Continuous Bloom in America." Both English and Italian inspiration commingle in this beautiful spot. Its setting of old trees on three sides, with the upsloping hill to the rear covered with choice blossom trees and evergreens, as well as the ancient hedge, furnish a background in keeping with the dignity of the place. The pergola is only the beginning of an interesting upper shrub and bulb garden with rambling paths. Other views are given in plates 86 and 172.

At Cherrycroft, the garden also blooms continuously, and some of its plans are likewise given in the book above-mentioned. The pergola and tea-house lead out to a maze formed by a tall Arbor-Vitæ hedge. Adjoining is a Rose garden, more or less continually in bloom, and near by a garden for cutting-flowers. The outlook over the formal garden, both from house and pergola, is upon a sea of flowers, possibly unequalled in its profusion of bloom. The four beds encircling the pool are first covered with Pansies and English Daisies, each bed containing one large clump of German Iris, edged with Cottage Tulips. For later bloom, white Petunias fill two beds, light pink Petunias the other two beds. Surrounding the rim of the pool there are Campanula medium, alternating with fall-sown Larkspur, the former replaced by Balsam. The four large beds opposite the pool-beds are planted in predominating tones of yellow, blue, pink, and dark red respectively, with white freely intermixed. The beds on the upper level are treated rather similarly.

At both Glen Alpine and Cherrycroft nurseries of cold-frames abundantly supply the many annuals and perennials required to fill the broad beds. The prevailing colors required in both gardens are pink, dark red, blues, and yellows. Of the latter, the stronger tones are used only in yellow and blue beds. If there is strict adherence to their planting schemes the richness of their bloom will continue through future seasons. But, alas! how uncertain the fulfilment, when the most necessary flowers may disappoint at the eleventh hour, or the gardeners fail to abide by the plans, especially concerning the color scheme!

At Ridgewood Hill the planting is for spring and autumn bloom, and its three-terraced garden is an excellent piece of work, nestling to the hillside with its vista of hills beyond. This lovely nook deserves to rank among the best in terraced gardens.

Mrs. Fraser's garden, enclosed within the semicircle of the house and a curving Hemlock hedge, is veritably a gem in lovely color-blending. All the periods of the garden season are represented here, difficult as it is to accomplish continuous bloom in narrow beds. First Pansies and early Tulips, followed by the later ones, flood the little court with wonderfully tinted tones. Then Lupins, Canterbury Bells, Sweet William, Chinese Delphinium and *Lilium candidum*, followed by Larkspur, Zinnia, Snapdragon, Scabiosa, *Salpiglossis*, Heliotrope, Ageratum, and compact Petunias, Gladioli, and September hardy Chrysanthemum. Constant ministration to the needs of this garden keeps it in a state of fresh

bloom and order.

The garden at "Onunda," Madison, attracts many visitors and has long been famous for its beauty and order. It is ablaze with color from May to October. Annuals in richest massing fill all the small beds, and perennials with annuals are closely grouped in the wall beds. The color effect is unusual and the adjoining Rose garden is complete with choicest bloom.

The planting at Blairsden, near Peapack, is probably the most perfect in the State. The accompanying pictures give a limited idea of its beauty. The hill covered with wild shrubs sloping to the lake, the formal garden, the water garden and Rose garden, with the long inclined pathway seeming to lead out to space immeasurable into the green Garden of Everyman, combine with the scenery to make it a place of remarkable beauty. The formal garden with vine-covered brick wall is like the villa, Italian in design.

The numerous gardens of Short Hills must be represented by one charming glimpse of Brooklawn, an idyllic spot embodying the creative sense of a poet. Its design is quite unusual in the garden world, and perfect in its simplicity. Informal rather than strictly formal, with beds of curving lines and grass paths it may be considered the most original plan in this collection.

Old Princeton, with its picturesque university, is additionally favored in possessing gardens worthy of such associations and equalling the best in our country. The one at Drumthwacket is probably more reminiscent of English gardens than any other. The broad beds, profuse in glowing yet orderly bloom, are especially lovely in June. The garden has the benefit of ancient trees as a setting and the richness of its planting combined with the white balustrade lends a noble effect, comparing favorably with many of those abroad. The beautiful water garden, reached by a winding stone stairway, is encircled by willows and forest trees which fill the little lake with green reflections.

A winter garden is a luxury so rare that one dwells with keenest pleasure upon the view from Thornton--a most perfect specimen of its kind. This evergreen planting is the central scheme of an elaborate plan and divides the perennial and Rose garden on one side from the "cutting" garden on the other. The best of the evergreens in clipped forms, Barberry with its bright winter berries, Laurel, and Rhododendron foliage unite to enliven the winter scene in this pleasant space, when outside all is gray and lifeless.

Mrs. Seabrook's garden belongs to still another distinctly different class, illustrating a planting which appeals strongly to the many Americans who ardently admire simplicity in outdoor art. Here we find a sweet place in which to live in idle hours, with favorite flowers well-kept, a pool, and shaded retreats from summer sun.

[Illustration: PLATE VI

"Glen Alpine," Morristown, N. J. Mrs. Charles W. McAlpin

From a photograph, colored by Mrs. Herbert A. Raynes]

[Illustration: PLATE 75
"Cherrycroft," Morristown, N. J. Dudley Olcott, Esq.
From an autochrome photograph by Parker Brothers]

[Illustration: PLATE 76
A three-terraced garden
"Ridgewood Hill," Morristown, N. J. Mrs. Frederic H. Humphreys
From a photograph by Parker Brothers]

[Illustration: PLATE 77
Morristown, N. J. Mrs. George C. Fraser
From a photograph by Parker Brothers]

[Illustration: PLATE 78
"Blairsden," Peapack, N. J. C. Ledyard Blair, Esq.
Reproduced by courtesy of Doubleday, Page & Co.]

[Illustration: PLATE 79
"Blairsden," Peapack, N. J. C. Ledyard Blair, Esq.
Reproduced by courtesy of Doubleday, Page & Co.]

[Illustration: PLATE 80
"Blairsden," Peapack, N. J. C. Ledyard Blair, Esq.
Reproduced by courtesy of Doubleday, Page & Co.]

[Illustration: PLATE 81
"Brooklawn," Short Hills, N. J. Mrs. Edward B. Renwick
From a photograph by Jessie Tarbox Beals]

[Illustration: PLATE 82
"Drumthwacket," Princeton, N. J. Mrs. Moses Taylor Pyne
From a photograph, copyright, by Miss Johnston--Mrs. Hewitt]

[Illustration: PLATE 83
"Drumthwacket," Princeton, N. J. Mrs. Moses Taylor Pyne
From a photograph, copyright, by Miss Johnston--Mrs. Hewitt]

[Illustration: PLATE 84
"Drumthwacket," Princeton, N. J. Mrs. Moses Taylor Pyne
From a photograph, copyright, by Miss Johnston--Mrs. Hewitt]

[Illustration: PLATE 85
"Onunda," Madison, N. J. Mrs. D. Willis James
From a photograph by Parker Brothers]

[Illustration: PLATE 86

"Glen Alpine," Morristown, N. J. Mrs. Charles W. McAlpin
From a photograph by Parker Brothers]

[Illustration: PLATE 87
"Thornton," Rumson, N. J. Mrs. J. Horace Harding
From a photograph by Alman & Co.]

[Illustration: PLATE 88
Highland, N. J. Mrs. H. H. Seabrook
From a photograph by Jessie Tarbox Beals]

NAUGHTS AND CROSSES

The Project Gutenberg EBook of *Games for the Playground, Home, School and Gymnasium*, by Jessie H. Bancroft

2 players.

Indoors; out of doors.

[Illustration diagram: NAUGHTS AND CROSSES]

A diagram is drawn on a slate, paper, or the ground, and consists of two vertical lines, crossed by two horizontal lines. One player chooses to write "naughts" (o) and the other "crosses" (x). The players take turns in marking a naught or a cross in one of the nine places provided by the diagram, the object being to get three naughts or three crosses in a row. This row may be either vertical, horizontal, or diagonal.

A score is kept of the games won by each player, and a third score is kept of the games played in which neither player wins.

This game may be played at the seashore, on the playground, or wherever the diagram may be traced on the earth.

For school use it is an interesting diversion for pupils who assemble early before a session opens, or who remain in over a rainy noontime.

NIMBLE SQUIRREL

ibid

Any number of players.

Schoolroom; parlor; playground.

This is a device for mental arithmetic. It is one of which children are very fond. As the play element may enter very largely into the fanciful suggestions used by the teacher, it seems in place in a book of games.

The teacher states her problem in a manner similar to the following:--

"There was a tree with fifty branches. A squirrel started on the first branch, jumped up three branches [to the fourth], came halfway down [to the second], went three times as high [sixth branch], fell halfway down [third branch], saw a dog, and ran to the top of the tree; fell to the ground and started over again; went up eight branches, jumped past three branches," etc., finishing up with, "How many branches from the top was he?"

This game has been found intensely interesting for children through the upper grades of the elementary schools.

TRAMPING NORTHWARD

from the Project Gutenberg etext of *Four Months Afoot in Spain*,
by Harry A. Franck

To the man who will travel cheaply, interlarding his walking trips with such journeys by train as may be necessary to cover the peninsula in one summer, Spain offers the advantages of the "billete kilométrico." The kilometer ticket is sold in all classes and for almost any distance, and is valid on all but a few branch lines. One applies at a ticket agency, leaves a small photograph of one's self, and comes back a couple of days later to receive a sort of 16mo mileage-book containing legal information sufficient to furnish reading matter for spare moments for a week to come and adorned with the interesting likeness already noted.

I made such application during my second week in Seville, and received for my pains a book good for two thousand kilometers (1280 miles) of third-class travel during the ensuing three months. The cost thereof--besides the infelicity of sitting to a photographer in a sadly mosquito-bitten condition--covering transportation, government tax on the same, printing and the tax therefor, the photograph and the tax for that privilege, and the government stamp attesting that the government was satisfied it could tax no more, footed up to seventy-five pesetas, or concisely, thirteen dollars and thirty cents.

But--if there is anything in official Spain that has not a "but" attached it should be preserved in a museum--but, I say, the kilometer-coupons are printed in fives rather than in ones, and however small the fraction of distance overlapping, it costs five kilometers of ticket. Moreover--there is usually also a "moreover" following the "but" clause in Spanish ordinances--moreover, there are hardly two cities in Spain the railway distance between which does not terminate in the figures one or six. It does not seem reasonable to believe that the railroads were surveyed round-about to accomplish this result; it must be, therefore, that in the hands of Spanish railway measurers the kilometer is susceptible to such shrinkage as may be needful. At any rate--and this is the thought I had hoped to lead up to--at any rate it was very often possible, by walking six or eleven or sixteen kilometers,

to save ten or fifteen or twenty kilometers of ticket; and the game of thus outwitting the railway strategists was incomparably more diverting than either solitaire or one-hand poker.

Thus it was that, though I planned to reach Córdoba that evening, I left Seville during the morning of July 8 on foot. In my knapsack was a day's supply of both food and drink, in the form of three-cent's worth of those fresh figs that abound in Spain--the one fruit that is certainly descended directly from the Garden of Eden. For miles the route led across a desert-dry land as flat as a western prairie, grilling in the blazing sunshine. At rare intervals an olive-tree cast a dense black shadow. There was no grass to be seen, but only an occasional tuft of bright red flowers smiling bravely above the moistureless soil.

Long hours the retrospect of the city of toreros remained, the overgrown cathedral bulking gigantic above all else. All the day through cream-white Carmona on her hilltop--a lofty island in a sea turned sand--gleamed off to the southward, visible almost in detail through the truly transparent air of Andalusia. I did not go to Carmona, near as she is to Seville; I never care to, for certainly she cannot be half so bewitching in reality as she looks on her sheer-faced rock across these burning plains of sand. To the north, beyond the brown Guadalquivir, lay the distance-blue foothills of the Sierra Morena, dying away in the northern horizon.

It was twenty-one o'clock by her station timepiece when I descended at Córdoba from the train I had boarded in the dusk at Tocina. A mile's stroll brought me to the city itself, and a lodging. Poor old Córdoba has fallen on parlous times. Like those scions of nobility one runs across now and then "on the road," it is well that she has her papers to prove she was once what she claims to have been. Surely none would guess her to-day a former imperial city of the Caliphs, the Bagdad and Mecca of the West. Her streets, or rather her alleys, for she has no streets, are bordered for the most part by veritable village hovels. Most African in aspect of all the cities of Spain, this once center of Arabic civilization looks as if she had been overwhelmed so often that she has utterly lost heart and given up, expending what little sporadic energy she has left in constructing a tolerable Alameda to the station, either that she may have always open an avenue of escape, or to entice the unsuspecting traveler into her misery.

To the imagination the Córdoba of to-day is wholly a deception. Yet she may rest assured that she will not be entirely forgotten so long as her one lion, the cathedral, or more properly her chief mosque, remains. For in spite of Christian desecration, in spite of the crippled old women who are incessantly drawing water in its Patio of the Orange-trees, despite even the flabby, cynical priests that loaf in the shade of the same, smoking their cigarettes, and the beggars at its doors like running sores on the landscape, the Mesdjid al-Dijâmi of Córdoba does not, like many a far-heralded "sight," bring disappointment. Once in the cool stillness of its forest of pillars one may still drift back into the gone centuries and rebuild and repeople in fancy the sumptuous days of the Moor.

This reconstruction of the past was not uninterrupted, however, on the morning of my visit. For in the church, that heavy-featured intruder

within the mosque like a toadstool that has sprung up through some broken old Etruscan vase, mass was celebrating. I crossed before the open door and glanced in. Some thirty strapping, well-fed priests were lounging in the richly-carved choir stalls, chanting a resonant wail that was of vast solace, no doubt, to some unhappy soul writhing in purgatory. There was not the shadow of a worshiper in the building. Yet these able-bodied and ostensibly sane men croaked on through their chants as serious-featured as if all the congregation of Córdoba were following their every syllable with reverent awe.

They interfered not in the least with sight-seeing, however, being, as I have said, in the church proper, an edifice wholly distinct from the mosque and one which none but a conscientious tourist or a fervent Catholic would care to enter. There were, nevertheless, certain annoyances, in the persons of a half-dozen bleary crones and as many ragged and officious urchins, who crowded about offering, nay, thrusting upon me their services as guides.

In time I shook off all but one ugly fellow of about fifteen, who hung irrepressibly on my heels. Mass ended soon after, and the priests filed out into the mosque chatting and rolling cigarettes, and wandered gradually away. One of them, however, catching sight of me, advanced and clutching my would-be guide by the slacker portions of his raiment, sent him spinning toward the door.

"Es medio loco, eso," he said, stepping forward with a shifty smile and nudging me with an elbow, "a half-witted fellow who will trouble you no more. With your permission I will show you all that is to be seen, and it shall cost you nothing."

I accepted the offer, not because any guidance was necessary, or even desirable, but glad of every opportunity for closer acquaintance and observation of that most disparaged class of Spanish society. To one to whom not only all creeds, but each of the world's half-dozen real religions sum up to much the same total, the general condemnation of the priesthood of Spain had hitherto seemed but another example of prejudice.

This member of the order was a man of forty, stoop-shouldered, his tonsure merging into a frontal baldness, with the face and manners of a man-about-town and a frequenter of the Tenderloin. For three sentences, perhaps, he conversed as any pleasant man of the world might with a stranger. Then we paused to view several paintings of the Virgin. They were images deeply revered by all true Catholics, yet this smirking fellow began suddenly to comment on them in a string of lascivious indecencies which even I, who have no reverence for them whatever, could not hear without being moved to protest. As we advanced, his sallies and anecdotes grew more and more obscene, his conduct more insinuating. When he fell to hinting that I should, in return for his kindness, bring forward a few tales of a similar vintage, I professed myself sated with sight-seeing and, leading the way out into the sunshine to the stone terrace overlooking the Guadalquivir, with scanty excuse left him.

A walk across the stately old bridge and around the century-crumbled city walls lightened my spirits. In the afternoon, cutting short my siesta, I ventured back to the cathedral. The hour was well chosen; not another human being was within its walls. Unattended I entered the

famous third _mihrab_ and satisfied myself that its marble floor is really worn trough-like by the knees of pious Mohammedans, centuries since departed for whatever was in store for them in the realm of _houris_. Free from the prattle of "guides," I climbed an improvised ladder into the second mihrab, which was undergoing repairs; and for a full two hours wandered undisturbed in the pillared solitude.

Night had fallen when I set out on foot from Córdoba. The heat was too intense to have permitted sleep until towards morning, had I remained. Over the city behind, in the last glow of evening, there seemed to rise again the melancholy chant, ages dead, of the muezzin:

"Allah hû Allah! There is no God but God. Come to prayer. Allah ill Allah!"

The moon was absent, but the stars that looked down upon the steaming earth seemed more brilliant and myriad than ever before. In spite of them the darkness was profound. The Spaniard, however, is still too near akin to the Arab to be wandering in the open country at such an hour, and I heard not a sound but my own footsteps and the restless repose of the summer night until, in the first hour of the morning, I arrived at the solitary station of Arcoléa.

There I stretched out on a narrow platform bench, but was still gazing sleeplessly at the sky above when a "mixto" rolled in at two-thirty. The populous third-class compartment was open at the sides, and the movement of the train, together with the chill that comes at this hour even in Spain, made the temperature distinctly cold. That of itself would have been endurable. But close beside me, oppressively close in fact, sat a woman to the leeward of forty, of the general form of a sack of wheat, in her hand the omnipresent fan. Regularly at two-minute intervals she flung this open from force of habit, sent over me several icy draughts of air, and noting the time and place, heaved a vast "ay de mi!" and dropped the fan shut again--for exactly another two minutes.

I slept not at all and, descending as the night was fading at the station of Espeluy, shouldered my bundle and set off toward the sunrise. Three kilometers more and there lay before me the great open highway to Madrid, three hundred and seven kilometers away. I struck into it boldly, for all my drowsiness, reflecting that even the immortal Murillo had tramped it before me.

The landscape lay desolate on either hand, almost haggard in the glaring sunshine, offering a loneliness of view that seemed all at once to stamp with reality those myriad tales of the land pirates of Spain. Indeed, the race has not yet wholly died out. Since my arrival the peninsula had been ringing with the exploits of one Pernaless, a bandit of the old caliber, who had thus far outgeneraled even that world-famous exterminator of brigands, the modern guardia civil. His haunt was this very territory to the left of me, and not a week had passed since a band of travelers on this national carretera had seen fit to contribute to his transient larder.

But his was an isolated case, a course that was sure to be soon run. The necessity of making one's will before undertaking a journey through Spain is no longer imperative. In fact, few countries offer more safety to the traveler; certainly not our own. For the Spaniard is individually

one of the most honest men on the globe, notwithstanding that collectively, officially he is among the most corrupt. The old Oriental despotism has left its mark, deep to this day; and the Spaniard of the masses asks himself--and not without reason--why he should show loyalty to a government that is little more than two parties secretly bound by agreement alternately to share the spoils. Hence the law-breaker is as of yore not merely respected but encouraged. Pernaless in his short career had become already a hero and a pride of the Spanish people, a champion warring single-handed against the common enemy.

Without pose or pretense I may say that I would gladly have given two or three ten-dollar checks and as many weeks of a busy life to have fallen into the clutches of this modern Dick Turpin. His retreat would certainly have been a place of interest. But fortune did not favor, and I passed unmolested the long, hot stretch to the stony hilltop village of Bailen, a name almost better known to Frenchmen than to Spaniards.

There, however, I was waylaid. I had finished a lunch of all that the single grocery-store offered, which chanced to be stone-hard cheese and water, and was setting out again, when two civil guards gruffly demanded my papers. This was the only pair I was destined to meet whose manners were not in the highest degree polished. The screaming heat was, perhaps, to blame. I turned aside into the shade of a building and handed them my passport, which they examined with the circumspection of a French gendarme. In general, however, it spoke well of my choice of garb that I was rarely halted by the guardia as a possible vagrant nor yet by the officers of the octroi as a possessor of dutiable articles.

It would seem the part of wisdom in tramping in southern countries to walk each day until toward noon and, withdrawing until the fury of the sun is abated, march on well into the night. But the plan is seldom feasible. In all this southern Spain especially there is scarcely a patch of grass large enough whereon to lay one's head, to say nothing of the body; and shade is rare indeed. On this day, after a sleepless night, a siesta seemed imperative. In mid-afternoon I came upon a culvert under the highway and lay down on the scanty, dust-dry leaves at its mouth, shaded to just below the arm-pits. But sleep had I none; for about me swarmed flies like vultures over a field of battle, and after fighting them for an hour that seemed a week, I acknowledged defeat and trudged drowsily on.

Soon began a few habitations and a country growing much wheat. In nothing more than in her methods of husbandry is Spain behind--or as the Spaniard himself would put it--different from the rest of the world. Her peasantry has not reached even the flail stage of development, not to mention the threshing machine. The grain is cut with sickles. As it arrives from the field it is spread head-down round and round a saucer-shaped plot of ground. Into this is introduced a team of mules hitched to a sled, which amble hour by hour around the enclosure, sometimes for days, the boy driver squatting on the cross-piece singing a never-ceasing Oriental drone of a few tones. From each such threshing-floor the chaff, sweeping in great clouds across the carretera, covered me from head to foot as I passed.

It was some distance beyond the town of Guarramán and at nightfall that I entered a village of a few houses like dug-out rocks tossed helter-skelter on either side of the way. The dejected little shop

furnished me bread, wine, and dried fish and the information that another of the hovels passed for a posada. This was a single stone room, half floored with cobbles. The back, unfloored section housed several munching asses. The human portion was occupied by a stray arriero, the shuffling, crabbed old woman who kept the place, and by a hearty, frank-faced blind man in the early thirties, attended by a frolicsome boy of ten. It was furnished with exactly four cooking utensils, a tumbled bundle of burlap blankets in one corner, a smouldering cluster of fagots in another, and one stool besides that on which the blind man was seated.

This I took, reflecting that he who will see Spain must not expect luxury. The real Spaniard lives roughly and shows himself only to those who are willing to rough it with him. As I sat down, the blind man addressed me:

"Hot days these on the road, señor."

"Verdad es," I answered.

"You are a foreigner from the north," he remarked casually, as if to himself.

"Yes; but how do you know that?"

"Oh, a simple matter," he replied. "That you are a foreigner, by your speech. That you are from the north, because you only half pronounce the letter R. You said 'burro' in speaking of our four-legged companion there, whereas the word is 'bur-r-r-ro.' You have walked many leagues."

"What tells you that?"

"Carajo! Nothing simpler. Your step is tired, you sit down heavily, you brush your trousers and a thick dust arises."

Blindness, I had hitherto fancied, was an advantage only during certain histrionic moments at the opera, but here was a man who evidently made it a positive blessing.

"Your are about twenty-five," he continued.

"Twenty-six. You will be good enough, perhaps, to tell me how you guessed that."

"What could be easier? The tone of your voice; the pace at which your words fall. It is strange that you, a foreigner, should be such an amateur of bulls."

"Caramba!" I gasped. "You certainly do not learn that from the tone of my voice!"

"Ah! We cannot tell all our secrets," he chuckled; "we who must make a living by them."

Then in the night that had settled down he fell to telling stories, not intentionally, one would have said, but unconsciously, fascinating tales as those of the "Arabian Nights," full of the color and the extravagance

of the East, the twinkle of his cigarette gleaming forth from time to time and outlining the boy seated wide-eyed on the floor at his feet with his head against his master's knee. He was as truly a minstrel as any troubadour that wandered in the days of chivalry, a born story-teller all but unconscious of his gift. When after a long time he left off, we drifted again into conversation. He was wholly illiterate and in compensation more filled with true knowledge and wisdom than a houseful of schoolmen. His calling for five and twenty years had been just this of roaming about Spain telling his colorful stories.

"Were you born so?" I asked late in the evening.

"Even so, señor."

"A sad misfortune."

"You know best, señor," he answered, with a hearty laugh. "I have no notion how useful this feeling you call sight may be, but with those I have I live with what enjoyment is reasonable and find no need for another."

The crippled old crone, who seemed neither to have known any other life than this nor ever to have been attired in anything than the piece-meal rags that now covered her, dragged the heap of burlap from the corner and spread it in three sections on the stone floor. On one she threw herself down with many sighs and the creaking of rusty joints, the second fell to my lot, and the blind man and his boy curled up on the third. The arriero carried his own blanket and had long since fallen to snoring with his head on the saddle of his ass and his *alforjas* close beside him.

There is one Spanish sentence that expresses the most with the least breath, perhaps, of any single word on earth. It is "*Madrugáis?*" and means nothing less than "Is it your intention to get up early to-morrow morning?" In these wayside *fondas* it calls always for an affirmative answer, for the bedroom is certain to be turned into the living room and public hall and stable exit at the first glimmer of dawn.

I was on the road again by four-thirty. Three hours of plodding across a rising country brought me to La Carolina, a town as pleasing in comparison with its neighbors as its name. Its customs, however, were truly Spanish, even though many of the ancestors of its light-haired populace were Swiss, and my untimely quest for breakfast did nothing more than arouse vast astonishment in its half-dozen cafés, wrecked and riotous places in charge of disheveled, heavy-eyed "skittles." In the open market I found fresh figs even cheaper than in Seville and, asking no better fare, turned back toward the highway.

I had passed through half the town when suddenly I heard in a side street a familiar voice, singing to the accompaniment of a guitar. I turned thither and found the blind singer I had first encountered in Jaen, just on the point of drawing out his bundle of handbills. While his wife canvassed the group of early risers, I accosted him with the information that I had bought one of his sheets in Jaen a month before.

"Ah! You too tramp *la carretera?*" he replied, turning upon me a glance so sharp that for the moment I forgot he could not see.

"Sí, señor. Do you not also sell the music of your songs?"

"How can music be put on paper?" he laughed. "It comes as you sing. Are you going far?"

"To Madrid."

"Vaya!" he cried, once more posing his guitar. "Well, there is much to be enjoyed on the road--when the sun is not too high. Vaya V. con Dios, young man."

Beyond Las Navas de Tolosa the face of the landscape changed, the carretera mounting ever higher through a soilless stretch of angular hills of dull-gray, slate-colored rock. Above Santa Elena these broke up into deep gorges and mountain foothills, an utterly unpeopled country as silent as the grave. I halted to gaze across it, and all at once, reflecting on the stillness as of desolation that hangs over all rural Spain, there came upon me the recollection that in all the land I had not once heard the note of a wild bird.

In the utter quiet I reached a deep slit in the flanking mountain, and even the stream, that descended along its bottom was as noiseless as some phantom river. It offered all the facilities for a bath, however, and moreover under an overhanging mass of rock that warded off the sun had watered to un-Spanish greenness a patch of grass of a few feet each way. There I spent half the afternoon in slumber. The highway shortly after plunged headlong down into the very depths of the earth, squirmed for a time in the abyss, then clambered painfully upward between precipitous walls of gloomy slate to a new level. When suddenly, unexpectedly, almost physically there rose before my eyes the picture of the Knight of the Sorrowful Countenance, ambling past, close followed by thickset, hale-cheeked Sancho on his ass. For I had traversed the pass of Despeñaperros; languid Andalusia lay behind me, and ahead as far as the eye could reach spread the yet twice more barren and rocky tableland of La Mancha.

NEGOTIATIONS WITH UNION INDIANS

The Project Gutenberg EBook of *The American Indian as Participant in the Civil War*, by Annie Heloise Abel
1919

As though the Indians had not afflictions enough to endure merely because of their proximity to the contending whites, life was made miserable for them, during the period of the Civil War, as much as before and after, by the insatiable land-hunger of politicians, speculators, and would-be captains of industry, who were more often than not, rogues in the disguise of public benefactors. Nearly all of them were citizens of Kansas. The cessions of 1854, negotiated by George W. Manypenny, Commissioner of Indian Affairs, were but a prelude to the many that followed. For years and years there was in reality never a time when some sort of negotiation, _sub rosa_

or official, was not going on. The order of procedure was pretty much what it had always been: a promise that the remaining land should be the Indian's, undisturbed by white men and protected by government guarantee, forever; encroachment by enterprising, covetous, and lawless whites; conflict between the two races, the outraged and the aggressive; the advent of the schemer, the man with political capital and undeveloped or perverted sense of honor, whose vision was such that he saw the Indian owner as the only obstacle in the way of vast material and national progress; political pressure upon the administration in Washington, lobbying in Congress; authorization of negotiations with the bewildered Indians; delimitation of the meaning of the solemn and grandly-sounding word, *_forever_*.

When the war broke out, negotiations, begun in the

border warfare days, were still going on. This was most true as regarded the Osages, whose immense holding in southern Kansas was something not to be tolerated, so the politicians reasoned, indefinitely. Petitions,[622] praying that the lands be opened to white settlement were constantly being sent in and intruders,[623] who intended to force action, becoming more and more numerous and more and more recalcitrant. One of the first official communications of Superintendent Coffin embodied a plea for getting a treaty of cession for which the signs had seemed favorable the previous year. Coffin, however, discredited[624] a certain Dr. J.B. Chapman, who, notwithstanding he represented white capitalists,[625] had yet found favor with the Osages. To their

[Footnote 622: For example, take the petitions forwarded by M.W. Delahay, surveyor-general of Kansas [Indian Office Consolidated Files, *_Neosho_*, D 455 of 1861]. One of the petitions contains this statement: "... The lands being largely settled upon and improved and those adjacent being all claimed and settled upon by residents--while a large emigration from Texas and other rebellious States are forced to seek homes in a more northern and uncongenial climate greatly against their interests and inclinations...."]

[Footnote 623: Intruders upon the Osage lands, as upon the Cherokee Neutral, were numerous for years before the war. Agent Dorn was continually complaining of them, chiefly because they were free-state in politics. He again and again asked for military assistance in removing them. See his letter to Greenwood, February 26, 1860, *_Neosho_*, 1833-1865, D 107. Buchanan's administration had conceived the idea of locating other Kansas Indians upon the huge Osage Reserve. See Dorn to Greenwood, March 26, 1860, *Ibid.*, D 119. Apparently, the fragments of tribes in the northeastern corner of Indian Territory had been approached on the same subject, but they did not favor it and Agent Dorn was doubtful if the Osages would [Dorn to Greenwood, April 17, 1860, *Ibid.*, D 129].]

[Footnote 624: He described him as a self-appointed guardian of the Osages, as a scamp and a nuisance [Coffin to Dole, June 17, 1861, *Ibid.*, C 1223 of 1861].]

[Footnote 625: Chapman, August 26, 1860, inquired of Greenwood whether there was any prospect of a treaty being negotiated with the Osages and whether the capitalists he represented would be likely to secure

railroad rights to the South by it. He asserted that the Delawares had been "humbled" by their treaty, it having been negotiated "in the interests of the Democrats at Leavenworth" [Ibid., C 702 of 1860].]

everlasting sorrow and despoliation, the Indians have been fated to place a child-like trust in those least worthy.

The defection of portions of the southern tribes offered an undreamed of opportunity for Kansas politicians to accomplish their purposes. They had earlier thought of removing the Kansas tribes, one by one, to Indian Territory; but the tribes already there had a lien upon the land, titles, and other rights, that could not be ignored. Their possession was to continue so long as the grass should grow and the water should run. It was not for the government to say that they should open their doors to anybody. An early intimation that the Kansans saw their opportunity was a resolution[626] submitted by James H. Lane to the Senate, March 17, 1862, proposing an inquiry into "the propriety and expediency of extending the southern boundary of Kansas to the northern boundary of Texas, so as to include within the boundaries of Kansas the territory known as the Indian territory." Obviously, the proposition had a military object immediately in view; but Commissioner Dole, to whom it was referred, saw its ulterior meaning and reported[627] adversely upon it as he had upon an earlier proposition to erect a regular territorial form of government in the Indian country south of Kansas.[628] He was "unable to perceive any advantage to be derived from the adoption of such a measure, since the same military power that would be required to enforce the authority of territorial officers is all-sufficient to protect and enforce the authority of such officers as are required in the management of our present system

[Footnote 626: _United State Congressional Globe_, 37th congress, second session, part ii, p. 1246.]

[Footnote 627: Dole to Smith, April 2, 1862, Indian Office _Report Book_, no. 12, 353-354.]

[Footnote 628: Dole to Smith, March 17, 1862, Ibid., 335-337.]

of Indian relations." [629] And he insisted that the whole of the present Indian country should be left to the Indians.[630] The honor of the government was pledged to that end. Almost coincidentally he negatived[631] another suggestion, one advocated by Pomeroy for the confiscation of the Cherokee Neutral Lands.[632] For the time being, Dole was strongly opposed to throwing either the Neutral Lands or the Osage Reserve open to white settlers.

Behind Pomeroy's suggestion was the spirit of retaliation, of meting out punishment to the Indians, who, because they had been so basely deserted by the United States government, had gone over to the Confederacy; but the Kansas politicians saw a chance to kill two birds with one stone, vindictively punish the southern Indians for their defection and rid Kansas of the northern Indians, both emigrant and indigenous. The intruders upon Indian lands, the speculators and the politicians, would get the spoils of victory. Against the idea of punishing the southern Indians for what after all was far from being

entirely their fault, the friends of justice marshaled their forces. Dole was not exactly of their number; for he had other ends to serve in resisting measures advanced by the Kansans, yet, to his credit be it said that he did always hold firmly to the notion that tribes like the Cherokee were more sinned against than sinning. The government had been the first to shirk responsibility and to violate sacred obligations. It had failed to give the protection guaranteed by treaties and it was not giving it yet adequately.

[Footnote 629: Dole to Smith, March 17, 1862, Indian Office _Report Book_, no. 12, 335.]

[Footnote 630: Report of April 2, 1862.]

[Footnote 631: Dole to Smith, March 20, 1862, Indian Office _Report Book_, no. 12, 343-344.]

[Footnote 632: _Daily Conservative_, May 10, 1862. Note the arguments in favor of confiscation as quoted from the _Western Volunteer_.]

The true friends of justice were men of the stamp of W.S. Robertson[633] and the Reverend Evan Jones,[634] who went out of their way to plead the Indian's cause and to detail the extenuating circumstances surrounding his lamentable failure to keep faith. Supporting the men of the opposite camp was even the Legislature of Kansas. In no other way can a memorial from the General Assembly, urging the extinguishment of the title of certain Indian lands in Kansas, be interpreted.[635]

It is not easy to determine always just what motives did actuate Commissioner Dole. They were not entirely above suspicion and his name is indissolubly connected with some very nefarious Indian transactions; but fortunately they have not to be recounted here. At the very time when he was offering unanswerable arguments against the propositions of Lane and Pomeroy, he was entertaining something similar to those propositions in his own mind. A special agent, Augustus Wattles, who had been sufficiently familiar and mixed-up with the free state and pro-slavery controversy to be called upon to give testimony before the Senate

[Footnote 633: Robertson wrote to the Secretary of the Interior, January 7, 1862, asking most earnestly "that decisive measures be not taken against the oppressed and betrayed people of the Creek and Cherokee tribes, until everything is heard about their struggle in the present crisis" [Department of the Interior, _Register of Letters Received_, "Indians," no. 4]. The letter was referred to the Indian Office and Mix replied to it, February 14, 1862 [Indian Office _Letter Book_, no. 67, p. 357]. The concluding paragraph of the letter is indicative of the government feeling, "... In reply I transmit herewith for your information the Annual Report of this Office, which will show ... what policy has governed the Office as to this matter, and that it is in consonance with your wish...."]

[Footnote 634: Jones wrote frequently and at great length on the subject of justice to the Cherokees. One of his most heartfelt appeals was that of January 21, 1862 [Indian Office Consolidated Files,

Cherokee, J 556 of 1862].]

[Footnote 635: Cyrus Aldrich, representative from Minnesota and chairman of the House Committee on Indian Affairs referred the memorial to the Indian Office [_Letters Registered_, vol. 58, _Southern Superintendency_, A. 484 of 1862].]

Harper's Ferry Investigating Committee[636] and who had been on the editorial staff of the New York Tribune,[637] had, in 1861, been sent by the Indian Office to inspect the houses that Robert S. Stevens had contracted to build for the Sacs and Foxes of Mississippi and for the Kaws.[638] The whole project of the house-building was a fraud upon the Indians, a scheme for using up their funds or for transferring them to the pockets of promoters like Stevens[639] and M.C. Dickey[640] without the trouble of giving value received.

From a letter[641] of protest, written by Stevens against Wattles's mission of inspection, it can be inferred that there was a movement on foot to induce the Indians to emigrate southward. Stevens, not wholly disinterested, thought it a poor time to attempt changes in tribal

[Footnote 636: Robinson, _Kansas Conflict_, 358.]

[Footnote 637:--Ibid., 370. For other facts touching Wattles and his earlier career, see Villard, _John Brown_, index; Wilson, _John Brown: Soldier of Fortune_, index.]

[Footnote 638; On the entire subject of negotiations with the Indians of Kansas, see Abel, _Indian Reservations in Kansas and the Extinguishment of Their Titles_. The house-building project is fully narrated there.]

[Footnote 639: For additional information about Stevens, see _Daily Conservative_, February 11, 12, 13, 28, 1862. Senator Lane denounced him as a defaulter to the government in the house-building project. See _Lane_ to Dole, April 22, 1862; Smith to Dole, May 13 1862; Dole to Lane, May 5, 1862, _Daily Conservative_, May 21, 1862. In July, Lane, hearing that certificates of indebtedness were about to be issued to Stevens on his building contract for the Sacs and Foxes, entered a "solemn protest against such action" and requested that the Department would let the matter lie over until the assembling of Congress [Interior Department, _Register of Letters Received_, January 2, 1862 to December 27, 1865, "Indians," no. 4]. Governor Robinson's enemies regarded him as the partner of Stevens [_Daily Conservative_, November 22, 1861] in the matter of some other affairs, and that fact may help to explain Senator Lane's bitter animosity. The names of Robinson and Stevens were connected in the bond difficulty, which lay at the bottom of Robinson's impeachment.]

[Footnote 640: Dickey's interest in the house-building is seen in the following: Dickey to Greenwood, February 26, 1861, Indian Office General Files, _Kansas_, 1855-1862, D250; same to same, March 1, 1861, Ibid., D 251.]

[Footnote 641: Stevens to Mix, August 24, 1861, Indian Office Special Files, no. 201, _Sac and Fox_, S439 of 1861.]

policy. His conclusions were right, his premises, necessarily unrevealed, were false. Wattles became involved in the emigration movement, if he did not initiate it, and, subsequent to making his report upon the house-building, received a private communication from Dole, asking his opinion "of a plan for confederating the various Indian tribes, in Kansas and Nebraska, into one, and giving them a Territory and a Territorial Government with political privileges." [642] This was in 1861, long before any scheme that Lane or Pomeroy had devised would have matured. Wattles started upon a tour of observation and inquiry among the Kansas tribes and discovered that, with few exceptions, they were all willing and even anxious to exchange their present homes for homes in Indian Territory. Some had already discussed the matter tentatively and on their own account with the Creeks and Cherokees. On his way east, after completing his investigations, Wattles stopped in New York and "consulted with our political friends" there "concerning this movement, and they not only gave it their approbation, but were anxious that this administration should have the credit of originating and carrying out so wise and so noble a scheme for civilizing and perpetuating the Indian race." Would Wattles and his friends have said the same had they been fully cognizant of the conditions under which the emigrant tribes had been placed in the West?

In February of 1862, the House of Representatives called [643] for the papers relating to the Wattles mission [644] and, in March, Wattles expatiated upon the

[Footnote 642: Wattles to Dole, January 10, 1862, Indian Office Special Files, no. 201, _Central Superintendency_, W 528 of 1862.]

[Footnote 643: Department of the Interior, _Register of Letters Received_, "Indians," no. 4, p. 439.]

[Footnote 644: The papers relating to the mission are collected in Indian Office Special Files, no. 201.]

emigration and consolidation scheme in a report to Secretary Smith. [645] Then, yet in advance of congressional authorization, began a systematic course of Indian negotiation, all having in view the relieving of Kansas from her aboriginal encumbrance. No means were too underhand, too far-fetched, too villainous to be resorted to. Every advantage was taken of the Indian's predicament, of his pitiful weakness, political and moral. The reputed treason of the southern tribes was made the most of. Reconstruction measures had begun for the Indians before the war was over and while its issue was very far from being determined in favor of the North.

As if urged thereto by some influence malign or fate sinister, the loyal portion of two of the southern tribes, the Creeks and the Seminoles, took in April, 1862, a certain action that, all unbeknown to them, expedited the northern schemes for Indian undoing. The action referred to was tribal reorganization. Each of the two groups of refugees elected chiefs and headmen and notified the United States government that it was prepared to do business as a nation. [646] The business in mind had to do with annuity payments [647] and other dues but the Indian Office soon extended it to include treaty-making.

[Footnote 645: Indian Office Consolidated Files, _Central Superintendency_, W 528 of 1862; Department of the Interior, _Register of Letters Received_, "Indians," no. 4, p. 517.]

[Footnote 646: Ok-ta-ha-ras Harjo and others to Dole, April 5, 1862, Indian Office General Files, _Creek_, 1860-1869, O 45; Coffin to Dole, April 15, 1862, transmitting communication of Billy Bowlegs and others, April 14, 1862 *ibid.*, _Seminole_, 1858-1869, C1594; _Letters Registered_, vol. 58.]

[Footnote 647: On the outside of the Seminole petition, the office instruction for its answer of May 7, 1862, reads as follows: "Say that by resolution of Congress the annuities were authorized to be used to prevent starvation and suffering amongst them and that being the only fund in our hands must not be diverted from that purpose at present."]

Negotiations with the Osages had been going on intermittently all this time. No opportunity to press the point of a land cession had ever been neglected and much had been made, in connection with the project for territorial organization, of the fact that the Osages had memorialized Congress for a civil government, they thinking by means of it to prevent further frauds and impositions being practiced upon them.[648] Coffin and Elder, suspicious of each other, jealously watched every avenue of approach to Osage confidence. On the ninth of March, Elder inquired if Coffin had been regularly commissioned to open up negotiations anew and asked to be associated with him if he had.[649] A treaty was started but not finished for Elder received a private letter from Dole that seemed to confine the negotiations to a mere ascertaining of views.[650] Then the Indians grown weary of uncertainty took matters into their own hands and appointed several prominent tribesmen for the express purpose of negotiating a treaty that would end the "suspense as to their future destiny." [651] From the treaty of cession that Coffin drafted, he having taken a miserably unfair advantage of Osage isolation and destitution, the Osages turned away in disgust.[652] In November, some of their leading men journeyed up to Leroy to invite the dissatisfied Opoeth-le-yo-ho-la to winter with them.[653] Coffin seized the occasion to reopen the subject of a cession and the Indians manifested

[Footnote 648: Indian Office Consolidated Files, _Neosho_, A 476 of 1862. See also Indian Office report to the Secretary of the Interior, May 6, 1862. The Commissioner's letter and the memorial were sent to Aldrich, May 9, 1862.]

[Footnote 649: Indian Office Consolidated Files, _Neosho_, E 94. of 1862.]

[Footnote 650: Coffin to Dole, April 5, 1862, *Ibid.*, C 1583.]

[Footnote 651: Communication of April 10, 1862, transmitted by Chapman to Dole, *Ibid.*, C 1640.]

[Footnote 652: Elder to Coffin, July 9, 1862, *Ibid.*, E 114.]

[Footnote 653: Coffin to Dole, November 16, 1862, *Ibid.*, C 1904.]

a willingness to sell a part of their Reserve; but again Coffin was too grasping and another season of waiting intervened.

With slightly better success the Kickapoos were approached. Their lands were coveted by the Atchison and Pike's Peak Railway Company and Agent O.B. Keith used his good offices in the interest of that corporation.[654] Good offices they were, from the standpoint of benefit to the grantees, but most disreputable from that of the grantors. He bribed the chiefs outrageously and the lesser men among the Kickapoos indignantly protested.[655] Rival political and capitalistic concerns, emanating from St. Joseph, Missouri, and from the northern tier of counties in Kansas,[656] took up the quarrel and never rested until they had forced a hearing from the government. The treaty was arrested after it had reached the presidential proclamation stage and was in serious danger of complete invalidation.[657] It passed muster only when a Senate amendment had rendered it reasonably acceptable to the Kickapoos.

Not much headway was made with Indian treaty-making in 1862.[658] In March, 1863, an element

[Footnote 654: Indian Office Consolidated Files, _Kickapoo_, I 655 of 1862 and I 361 of 1864.]

[Footnote 655:--Ibid., B 355 of 1863 and I 361 of 1864.]

[Footnote 656: Albert W. Horton to Pomeroy, June 20, 1863 and O.B. Keith to Pomeroy, June 20, 1863, Indian Office Consolidated Files, _Kickapoo_, G 59 and P 64 of 1863.]

[Footnote 657: Lane and A.C. Wilder requested the Interior Department, September 1, 1863, "that no rights be permitted to attach to R.R. Co. until charges of fraud in connection with Kickapoo Treaty are settled." Their request was replied to, September 12, 1863 [Interior Department, _Register of Letters Received_, January 2, 1862 to December 27, 1865, "Indians," no. 4, 361].]

[Footnote 658: Dole, however, seems to have become thoroughly reconciled to the idea. He submitted his views upon the subject once more in connection with a memorial that Pomeroy referred to the Secretary of the Interior "for the concentration of the Indian tribes of the West and especially those of Kansas, in the Indian country ... " [Dole to Smith, November 22, 1862, Indian Office _Report Book_, no. 12, pp. 505-506; Department of the Interior, _Register of Letters Received_, vol. D, November 22, 1862]. (cont.)]

conditioning a greater degree of success was introduced into the government policy.[659] That was by the Indian appropriation act, which, in addition to continuing the practice of applying tribal annuities to the relief of refugees, authorized the president to negotiate with Kansas tribes for their removal from Kansas and with the loyal portion of Indian Territory tribes for cessions of land on which to accommodate them.[660] As Dole pertinently remarked to Secretary Usher, the measure was all very well as a policy in prospect but it was one that most certainly could not be carried out until Indian Territory was in Federal possession. Blunt was still striving

after possession or re-possession but his force was not "sufficient to insure beyond peradventure his success." [661]

Scarcely had the law been enacted when John Ross and other Cherokees, living in exile and in affluence, offered to consider proposals for a retrocession to the United States public domain of their Neutral Lands. The Indian Office was not yet prepared to treat and not until November did Ross and his associates [662] get any

[Footnote 658: (cont.) December 26, 1862, Dole wrote to Smith thus: "... It being in contemplation to extinguish the Indian title to lands ... in Kansas and provide them with homes in the Indian Territory ... I would recommend that a commissioner should be appointed to negotiate ... I would accordingly suggest that Robt. S. Corwin be appointed ..." [Indian Office _Report Book_, no. 13, pp. 12-13]. Now Corwin's reputation was not such as would warrant his selection for the post. He was not a man of strict integrity. His name is connected with many shady transactions in the early history of Kansas.]

[Footnote 659: Presumably, Lane was the chief promoter of it. See Baptiste Peoria to Dole, February 9, 1863, Indian Office General Files, _Osage River_, 1863-1867.]

[Footnote 660: _U.S. Statutes at Large_, vol. xii, 793.]

[Footnote 661: Dole to Usher, July 29, 1863, Indian Office _Report Book_, no. 13, p. 211.]

[Footnote 662: His associates were then the three men, Lewis Downing, James McDaniel, and Evan Jones, who had been appointed delegates with him, (cont.)]

real encouragement [663] to renew their offer, yet the Cherokees had as early as February repudiated their alliance with the southern Confederacy. That the United States government was only awaiting a time most propitious for itself is evident from the fact that, when, in the spring following, refugees from the Neutral Lands were given an opportunity to begin their backward trek, they were told that they would not be permitted to linger at their old homes but would have to go on all the way to Fort Gibson, one hundred twenty miles farther south. [664] That was one way of ridding Kansas of her Indians and a way not very creditable to a professed and powerful guardian.

Almost simultaneously with Ross's first application came an offer from the oppressed Delawares to look for a new home in the far west, in Washington Territory. The majority preferred to go to the Cherokee country. [665] Some of the tribe had already lived there and wanted to return. Had the minority gained their point, the Delawares would have traversed the whole continent within the space of about two and a half centuries. They would have wandered from the Atlantic to the Pacific, from the Susquehanna River to the Willamette, in a desperate effort to escape the avaricious pioneer, and, to their own chagrin, they would have found him on the western coast also. Never again would there be any place for them free from his influence.

In the summer of 1863, negotiations were undertaken

[Footnote 662: (cont.) by the newly-constructed national council, for doing business with the United States government [Commissioner of Indian Affairs, _Report_, 1863, p. 23].]

[Footnote 663: See Office letter of November 19, 1863.]

[Footnote 664: David M. Harlan to Dole, December 20, 1864, Indian Office General Files, Cherokee 1859-1865, H 1033.]

[Footnote 665: Johnson to Dole, May 24, 1863, *ibid.*, _Delaware_, 1862-1866.]

in deadly earnest. A commencement was made with the Creeks in May, Agent Cutler calling the chiefs in council and laying before them the draft of a treaty that had been prepared, upon the advice of Coffin,[666] in Washington and that had been entrusted for transmission to the unscrupulous ex-agent, Perry Fuller.[667] The Creek chiefs consented to sell a tract of land for locating other Indians upon, but declared themselves opposed to any plan for "sectionizing" their country and asked that they might be consulted as to the Indians who were to share it with them. The month before they had prayed to be allowed to go back home. Well fed and clothed though they were, and quite satisfied with their agent, they were terribly homesick.[668] Might they not go down and clean out their country for themselves? It seemed impossible for the army to do it.[669]

Coffin next came forward with a suggestion that Indian colonization in Texas would be far preferable to colonization elsewhere, although if nothing better could be done, he would advocate the selection of the Osage land on the Arkansas and its tributaries.[670] Why he wanted to steer clear of the Indian Territory is not

[Footnote 666: "... I would most respectfully suggest that a Treaty be gotten up by you and the Sec. of the Interior, and sent to me and Gov. Carney and some other suitable com. to have ratified in due form and returned. And you will pardon me for saying that the Treaty should be a model for all that are to follow with the broken and greatly reduced, and fragmental tribes in the Indian Territory, and may be made greatly to promote the interests of the Indians and the Government especially in view of the removal of the Indians from Kansas and Nebraska as contemplated by recent Act of Congress."--COFFIN to Dole, March 22, 1863, *Ibid.*, Land Files, _Southern Superintendency_, 1855-1870, C 117.]

[Footnote 667: Cutler to Dole, May, 1863, *Ibid.*, General Files, _Creek_, 1860-1869, C 240.]

[Footnote 668: Ok-ta-ha-ras Harjo and others to "Our Father," April 1, 1863, (Indian Office General Files, _Creek_, 1860-1869).]

[Footnote 669: Same to same, May 16, 1863, *Ibid.*, O 6.]

[Footnote 670: Coffin to Dole, May 23, 1863, *Ibid.*, Land Files, _Southern Superintendency_, 1855-1870.]

evident. The Pottawatomies[671] asked to be allowed to settle on the Creek land,[672] but the Creeks were letting their treaty hang fire.

They wanted it made in Washington, D.C., and they wanted one of their great men, Mik-ko-hut-kah, then with the army, to assist in its negotiation.[673] Opoeth-le-yo-ho-la had died in the spring[674] and they were seemingly feeling a little helpless and forlorn.

Thinking to make better progress with the treaties and better terms if he himself controlled the government end of the negotiations, Commissioner Dole undertook a trip west in the late summer.[675] By the third of September the Creek treaty was an accomplished fact.[676] Aside from the cession of land for the accommodation of Indian emigrants, its most important provision was a recognition of the binding force of Lincoln's Emancipation Proclamation. In due course, the treaty went to the Senate and, in March, was accepted by that body with amendments.[677] It went back to the

[Footnote 671: A treaty had been made with the Pottawatomies by W.W. Ross, their agent, November 15, 1861 [ibid., _Pottawatomie_, I 547 of 1862]. Its negotiation was so permeated by fraud that the Indians refused to let it stand [Dole to Smith, January 15, 1862]. At this time, 1863, Superintendent Branch, against whom charges of gambling, drunkenness, licentiousness, and misuse of annuity funds had been preferred by Agent Ross [Indian Office General Files, _Pottawatomie_, R 21 and 143 of 1863], was endeavoring to persuade Father De Smet to establish a Roman Catholic Mission on their Reserve. De Smet declined because of the exigencies of the war. His letter of January 5, 1863, has no file mark.]

[Footnote 672: Cutler to Dole, June 6, 1863, Indian Office General Files, _Creek_, 1860-1869.]

[Footnote 673:--Ibid.]

[Footnote 674: Coffin to Dole, March 22, 1863.]

[Footnote 675: Proctor's letter of July 31, 1863 would indicate that Dole went to the Cherokee Agency before the Sac and Fox. Proctor was writing from the former place and he said, "Mr. Dole leaves to-day for Kansas ..." [Indian Office General Files, _Southern Superintendency_, 1863-1864, C 466].]

[Footnote 676: Indian Office Land Files, _Treaties_, Box 3, 1864-1866.]

[Footnote 677: Usher to Dole, March 23, 1864, Ibid.,]

Indians but they rejected it altogether.[678] The Senate amendments were not such as they could conscientiously and honorably submit to and maintain their dignity as a preëminently loyal and semi-independent people.[679] One of the amendments was particularly obnoxious. It affected the provision that deprived the southern Creeks of all claims upon the old home.[680] Dole's Creek treaty of 1863 was never ratified.

Other treaties negotiated by Dole were with the Sacs and Foxes of Mississippi,[681] the Osages, the Shawnees,[682]

[Footnote 678: Its binding force upon them was, however, a subject

of discussion afterwards and for many years [Superintendent Byers to Lewis V. Bogy, Commissioner of Indian Affairs, February 7, 1867, Ibid., General Files, _Creek_, 1860-1869, B 94].]

[Footnote 679: For an interpretation of the treaty relative to the claims of the loyal Creeks, see Dole to Lane, January 27, 1864 [ibid., _Report Book_, no. 13, pp. 287-291]. It is interesting to note that a certain Mundy Durant who had been sixty years in the Creek Nation, put in a claim, February 23, 1864, in behalf of the "loyal Africans." He asked "that they have guaranteed to them equal rights with the Indians ..." "All of our boys," said he, "are in the army and I feel they should be remembered ..." [Ibid., General Files, _Creek_, 1860-1869, D 362].]

[Footnote 680: Article IV. Both the Creeks and the Seminoles, in apprising the Indian Office of the fact that they had organized as a nation, had voiced the idea that the southern Indians had forfeited all their rights "to any part of the property or annuities ..."]

[Footnote 681: The Sacs and Foxes brought forward a claim against the southern refugees, for the "rent of 204 buildings," amounting to \$14,688.00 [Indian Office Land Files, _Southern Superintendency_, 1855-1870, Letter of May 14, 1864. See also Dole to Usher, March 25, 1865, Ibid., also I 952, C 1264, and C 1298, Ibid.,].

Coffin thought the best way to settle their claim was to give them a part of the Creek cession [Coffin to Martin, May 23, 1864, and Martin to Dole, May 26, 1864, Ibid., General Files, _Sac and Fox_, 1862-1866, M 284]. The Sac and Fox chiefs were willing to submit the case to the arbitrament of Judge James Steele. Martin was of the opinion that should their treaty, then pending, fail it would be some time before they would consent to make another. This treaty had been obtained with difficulty, only by Dole's "extraordinary exertions with the tribe" [Martin to Dole, May 2, 1864, Ibid., M 270].]

[Footnote 682: Negotiations with the Shawnees had been undertaken in 1862. In June, Black Bob, the chief of the Shawnees on the Big Blue Reserve in Johnson County, Kansas, protested against a treaty then before Congress. He claimed it was a fraud (cont.)]

and the New York Indians. He attempted one with the Kaws but failed.[683] The Osages, who had

[Footnote 682: (cont.) [Telegram, A.H. Baldwin to Dole, June 4, 1862, ibid., _Shawnee_, 1855-1862, B 1340 of 1862], which was the red man's usual appraisal of the white man's dealings. A rough draft of another treaty seems to have been sent to Agent Abbott for the Shawnees on July 18 and another, substantially the same, December 29. One of the matters that called for adjustment was the Shawnee contract with the Methodist Episcopal Church South, Dole affirming that "as the principal members of that corporation, and those who control it are now in rebellion against the U.S. Government, the said contract is to be regarded as terminated...." [Indian Office Land Files, _Shawnee_, 1860-1865, I 865]. Usher's letter to Dole of December 27, 1862 was the basis of the instruction. Dole's negotiations of 1863 were impeached as were all the previous, Black Bob and Paschal Fish, the first and second chiefs of the Chillicothe Band of Shawnees,

leading the opposition. Agent Abbott was charged with using questionable means for obtaining Indian approval [Ibid., General Files, _Shawnee_, 1863-1875]. Conditions at the Shawnee Agency had been in a bad state for a long time, since before the war. Guerrilla attacks and threatened attacks had greatly disturbed domestic politics. They had interfered with the regular tribal elections.

"Last fall (1862), owing to the constant disturbance on the border of Mo., the election was postponed from time to time, until the 12th of January. Olathe had been sacked, Shawnee had been burned, and the members of the Black Bob settlement had been robbed and driven from their homes, and it had not been considered safe for any considerable number to congregate together from the fact that the Shawnees usually all come on horseback, and the bushwhackers having ample means to know what was going on, would take the opportunity to make a dash among them, and secure their horses.

"De Soto was designated as the place to hold the election it being some twenty miles from the border ..."--Abbott to Dole, April 6, 1863, Ibid., Land Files, _Shawnee_, 1860-1865, A 158. In the summer, the Shawnees made preparations for seeking a new home. Their confidence in Abbott must have been by that time somewhat restored, since the prospecting delegation invited him to join it [ibid., _Shawnee_, A 755 of 1864]. A chief source of grievance against him and cause for distrust of him had reference to certain depredation claims of the Shawnees [Ibid., General Files, _Shawnee_, 1855-1862, I 801].]

[Footnote 683: The Kaw lands had been greatly depredated upon and encroached upon [Ibid., Land Files, _Kansas_, 1862]. Dole anticipated that troubles were likely to ensue at any moment. He, therefore, desired to put the Kaws upon the Cherokee land just as soon as it was out of danger [Dole to H.W. Farnsworth, October 24, 1863, ibid., _Letter Book_, no. 72, p. 57]. Jeremiah Hadley, the agent for a contemplated Mission School among the Kaws, was much exercised as to how a removal might affect his contract and work. See his letter to Dole, November 17, 1863.

An abortive treaty was likewise made with the Wyandots, whom Dole (cont.)]

recently[684] so generously consented to receive the unwelcome

[Footnote 683: (cont.) designed to place upon the Seneca-Shawnee lands. Both the Wyandots and the Seneca-Shawnees objected to the ratification of the treaty [Coffin to Dole, January 28, 1864, Indian Office Consolidated Files, _Neosho_, C 639 of 1864].]

[Footnote 684: They had recently done another thing that, at the time of occurrence, the Federals in Kansas deemed highly commendable. They had murderously attacked a group of Confederate recruiting officers, whom they had overtaken or waylaid on the plains. The following contemporary documents, when taken in connection with Britton's account [_Civil War on the Border_, vol. ii, 228], W.L. Bartles's address [Kansas Historical Society, _Collections_, vol. viii, 62-66], and Elder's letter to Blunt, May 17, 1863, _Official

Records_, vol. xxii, part ii, 286, amply describe the affair:

(a)

"I have just returned to this place from the Grand Council of the Great and Little Osage Indians. I found them feeling decidedly fine over their recent success in destroying a band of nineteen rebels attempting to pass through their country. A band of the Little Osages met them first and demanded their arms and that they should go with them to Humboldt (as we instructed them to do at the Council at Belmont). The rebels refused and shot one of the Osages dead. The Osages then fired on them. They ran and a running fight was kept up for some 15 miles. The rebel guide was killed early in the action. After crossing Lightning Creek, the rebels turned up the creek toward the camp of the Big Hill Camp. The Little Osages had sent a runner to apprise the Big Hills of the presence of the rebels and they were coming down the creek 400 strong, and met the rebels, drove them to the creek and surrounded them. The rebels displayed a white flag but the Indians disregarded it. They killed all of them as they supposed; but afterwards learned that two of them, badly wounded, got down a steep bank of the creek and made their escape down the creek. They scalped them all and cut their heads off. They killed 4 of their horses (which the Indians greatly regretted) and captured 13, about 50 revolvers, most of the rebels having 4 revolvers, a carbine and saber. There were 3 colonels, one lieutenant-colonel, one major and 4 captains. They had full authority to organise enroll and muster into rebel service all the rebels in Colorado and New Mexico where they were doubtless bound. Major Dowdney [Doudna] in command of troops at Humboldt went down with a detachment and buried them and secured the papers, letting the Indians keep all the horses, arms, etc. I have no doubt that this will afford more protection to the frontiers of Kansas than anything that has yet been done and from the frequency and boldness of the raids recently something of the kind was very much needed. The Indians are very much elated over it. I gave them all the encouragement I could, distributed between two and three hundred dollars worth of goods amongst them. There was a representative at the Council from the Osages that have gone South, many of them now in the army. He stated that they were all now very anxious to get back, and wished to know if they should meet the loyal Osages on the hunt on the Plains and come in with them if they could be suffered to stay. I gave him a letter to them promising them if they returned immediately and (cont.)]

refugees on the Ottawa Reserve,[685] were distinctly overreached by the government representatives, working in the interest of corporate wealth. In August, the chief men of the Osages had gone up to the Sac and Fox Agency to confer with Dole,[686] but Dole was being

[Footnote 684: (cont.) joined their loyal brethren in protecting the frontiers, running down Bushwhackers, and ridding the country of rebels, they should be protected. I advised them to come immediately to Humboldt and report to Major Dowdney and he would furnish them powder and lead to go on the hunt. This seemed to give great satisfaction to all the chiefs as they are exceedingly desirous to have them back and the representative started immediately back with the letter, and the Indians as well as the Fathers of the Mission have no doubt but they will return. If so, it will very materially weaken

the rebel force now sorely pressing Col. Phillips' command at Fort Gibson.

"The Osages are now very desirous to make a treaty are willing to sell 25 miles in width by 50 off the east end of their reservation and 20 miles wide off the north side, but I will write more fully of this in a day or two."--COFFIN to Dole, June 10, 1863, Indian Office Consolidated Files, _Neosho_, C 299 of 1863.

(b)

"It will be remembered that sometime in the month of May last a party consisting of nineteen rebel officers duly commissioned and authorised to organise the Indians and what rebels they might find in Colorado and New Mexico against the Government of the United States while passing through the country of the Great and Little Osages were attacked and the whole party slaughtered by these Indians. As an encouragement to those Indians to continue their friendship and loyalty to our Government, I would respectfully recommend that medals be given to the Head Chief of the combined tribes, White Hair, and the Head Chief of the Little Bear and the chiefs of the Big Hill bands, Clarimore and Beaver, four in all who were chiefly instrumental in the destruction of those emissaries.

"I believe the bestowal of the medals would be a well deserved acknowledgment to those chiefs for an important service rendered and promotive of good."--COFFIN to Dole, Indian Office Consolidated Files, _Neosho_. C 596.]

[Footnote 685: Coffin to Dole, July 13, 1863, Ibid., General Files, _Southern Superintendency_, 1863-1864. Coffin had been directed, by an office letter of June 24 to have the refugees removed. See also, Dole to Hutchinson, June 24, 1863, *ibid.*, _Letter Book_, no. 71, p. 69. Other primary sources bearing upon this matter are, Hutchinson to ?, June 11, 1863, *ibid.*, _Ottawa_, 1863-1873, H 230; Elder to Dole, August 10, 1863, _Neosho_, E 22 of 1863; Hutchinson to Dole, August 21, 1863, _Ottawa_, D 236 of 1863; Mix to Elder, September 11, 1863, *ibid.*, _Letter Book_, no. 71, p. 383.]

[Footnote 686: "About 100 of the Osages with their Chiefs and headmen visited the Sac and Fox agency to meet me on the 20th to Council and probably make a treaty to dispose of a part of their reserve. I was detained with the Delawares and Quantrels raid upon Lawrence and did not reach the reserve (cont.)]

unavoidably detained by the Delawares and by Quantrill's raid upon Lawrence,[687] so, becoming impatient, they left. The commissioner followed them to Leroy and before the month was out, he was able to report a treaty as made.[688] It was apparently done over-night and yet

[Footnote 686: (cont.) until the 25th and found the Osages had left that day for their homes. I followed them to this place [Leroy] 40 miles south of the Sac and Fox agency and have been in Council with them for two days. I have some doubt about succeeding in a treaty as the Indians do not understand parting with their lands in trust. I

could purchase all we want at present for not exceeding 25 cts pr acre but doubt whether the Senate would ratify such a purchase--as they have adopted the Homestead policy with the Gov't lands and would not wish to purchase of the Indians to give to the whites. I propose to purchase 25 miles by 40 in the S.E. corner of their reserve @ 5 pr. ct making a dividend of 10,000 annually. I have two reasons for this purchase. 1st I want the land for other Kansas tribes and 2nd The Indians are paupers now and must have this much money any way or starve. Then I propose to take in trust the north half of their reserve--to be sold for their benefit as the Sac and Fox and other tribes dispose of their lands. To this last the Indians object they want to sell outright and I may fail in consequence. We shall not differ much about the details--if we can agree on the main points--I shall know to-day--

"From here I return to the Sac and Fox agency where I have some hopes of making a treaty with them or at least agree upon the main points so soon as they can be provided with another home--The fact that we have failed to drive the traitors out of the Indian Country interferes very much with my operations here--from the Sac and Fox Reserve I may go to the Pottawatomies but rather expect that I will return to Leavenworth where I shall again council with the Delawares and from there go to the Kickapoos--Senator Pomeroy is here with me and will probably remain with me--Judge Johnston is also with me and assisting me as Clerk since Mr. Whiting left. This is not considered as a very safe country as Bush Whackers are plenty and bold--You may show this to Sec Usher--"--Indian Office Consolidated Files, _Neosho_, D 195 of 1863.]

[Footnote 687: Connelley, _Quantrill and the Border Wars_, 335-420.]

[Footnote 688: "I arrived here last night from Leroy, after having succeeded in effecting a treaty with the Osage Indians by which the Govt. obtain of them by purchase thirty miles in extent off the East end of their reserve (at a cost of 300,000\$ to remain on interest _forever_ at _5 pr ct_--which gives them an annuity of 15000\$ annually)--They also cede to the U.S. _in trust_ twenty miles off the North side of the Bal. of their reserve the full extent east and west--to be disposed of as the Sec. Int. shall direct for their benefit--with the usual reserves to half breeds--provision for schools etc.--I have been all this afternoon in Council with the Delawares who have to the No. of 30 or 40 followed me out here for the purpose of again talking over (cont.)]

it was not a conclusive thing; for, in October, the Osage chiefs were still making propositions[689] and

[Footnote 688: (cont.) the proposed treaty with them. They had trouble after I left them at Leavenworth, but our council today has done good and they have just left for home with the agreement to call a council and send a delegation to the Cherokees to look up a new home--When will Jno. Ross leave for his people. I wish he could be there when the Delaware delegation goes down--as I am exceedingly anxious that they get a home of the Cherokees.

"I think there is but little doubt but I shall make a treaty with the

Sac and Foxes as they say they are _satisfied_ to remove to a part of the Land I have purchased of the Osages--on the line next the Cherokees--I can make a treaty with the Creeks and may do so but I think I will make it _conditional_ upon the signatures of some of the Chiefs now in the army--Those here are very anxious to treat and sell us a large tract of the country The trouble with the Southern Indians is their claims for losses by the war I will have to put in a clause of some kind to satisfy them on that subject--That they are entitled to it I have no doubt--but what view Congress will take of it--or the Senate in ratifying the treaty of course I cannot tell--Some of the Wyandots are here--

"I have just closed a Council with the Sac and Foxes and have heard many fine speeches. We meet again day after tomorrow--as tomorrow must be appropriated to the Creeks--I think I shall have a success here--The Sack and Foxes to the No of say two hundred have a dance out on the green They are dressed and painted for the occasion and as it is in honor of my visit I must go out and witness it * * * Well we have had an extensive dance which cost me a beef and while waiting for a Chipaway Chief who comes as I learn to complain of his agent I go on with my Letter--The New York Indians are tolerably well represented and I shall talk with them tonight--This is a grand jubilee amongst the Indians here. So many tribes and parts of tribes or their Chiefs gathered here to see the Comr. Paint and feathers are in great demand and singing, whooping--and the Drum is constantly ringing in my ears. I am satisfied that it is a good arrangement to have them here together it is cheaper and better and saves much time.

"I made a great mistake that I did not bring maps of the reserves and especially of the Indian Territory--I do the best I can from the Treaties.

"I have had no mail for Eight Days as my mail is at Leavenworth. I expect my letters day after tomorrow when I hope to have a late letter from you as well as one from the Sec.--Will you please send Hutchinson some money he must have funds to pay for surveying and allotting the Ottawa reserve The survey is finished and pay demanded."

[Indian Office Consolidated Files, _Neosho_, D 198 of 1863].]

[Footnote 689: The propositions were in the form of a memorandum, drawn up by White Hair, principal chief of the Great and Little Osages, and Little Bear, principal chief of the Little Osages, who, in conjunction with Charles Mograin, assistant head chief of the Great and Little Osages, had been (cont.)]

making them after the fashion of the Creeks long before at Indian Springs.[690] Dole had finally to be told that the rank and file of the Osages would not allow their chiefs to confer with him except in general council.[691] As a matter of fact, not one of the Dole treaties could run the gauntlet of criticism and, consequently, the whole project of treaty-making in 1862 and 1863 accomplished nothing beneficial. It only served to complicate a situation already serious and to forecast that when the great test should come, as come it surely would, the government would be found wanting, lacking in magnanimity, lacking in justice, and all too willing to sacrifice its honor for big interests and transient causes.

[Footnote 689: (cont.) solicited by their people, when in council at Humboldt, July 4, to proceed to Washington and interview their Great Father [Coffin to Dole, July 16, 1863, Indian Office Consolidated Files, _Neosho_, C 365 of 1863]. The propositions were to the effect that the Osages would gladly sell thirty miles by twenty miles off the southeast corner of their Reserve and one-half of the Reserve on the north for \$1,350,000, which should draw six per cent interest until paid [Ibid., D 239 of 1863]. John Schoenmaker of the Osage Mission was apprehensive that the Roman Catholic interests would be disregarded as in the Potawatomi Treaty. See letter to Coffin, June 25th.]

[Footnote 690: Abel, _Indian Consolidation West of the Mississippi_.]

[Footnote 691: Charles Mograin warned Dole of this.]

NAHANT.

The Project Gutenberg EBook of *Retrospect of Western Travel, Volume II (of 2)*, by Harriet Martineau
1838

"A breath of our free heaven and noble sires."

HEMANS.

The whole coast of Massachusetts Bay is well worth the study of the traveller. Nothing can be more unlike than the aspect of the northern and southern extremities of the bay. Of Cape Ann, the northern point, with its bold shores and inexhaustible granite quarries, I have given some account in another book.[11] Not a ledge of rock is to be seen near Cape Cod, the southern extremity; but, instead of it, a sand so deep that travellers who have the choice of reaching it by horse or carriage prefer going over the last twenty miles on horseback; but then the sandhills are of so dazzling a whiteness as to distress the eyes. The inhabitants are a private race of fishermen and saltmen, dwelling in ground-floor houses, which are set down among the sand ridges without plan or order. Some communication is kept up between them and a yet more secluded race of citizens, the inhabitants of Nantucket and Martha's Vineyard, two islands which lie south of the southern peninsula of the bay. I much regretted that I had no opportunity of visiting these islands. Some stories that are abroad about the simplicity of the natives are enough to kindle the stranger's curiosity to see so fresh a specimen of human nature. In Nantucket there is not a tree, and scarcely a shrub. It is said that a fisherman's son, on accompanying his father for the first time to the mainland, saw a scrubby apple-tree. In great emotion, he cried, "Oh father! look there! what a beautiful tree! and what are those beautiful things on it? Are they lemons?" It was not my fortune to see any citizen of the United States who did not know an apple-tree at sight. It must be highly instructive to take a trip from this remarkable place across the bay to Nahant, in the month of August.

Footnote 11: Society in America, vol. i., page 281.

It was October when I visited Nahant, and all the gay birds of the summer had flown. I was not sorry for this, for fine people may be seen just as well in places where they are less in the way than on this rock. Nahant is a promontory which stretches out into the bay a few miles north of Boston; or it might rather be called two islands, connected with each other and with the mainland by ridges of sand and pebbles. The outermost of the islands is the larger, and it measures rather above a mile and a half in circumference. The whole promontory was bought, in the seventeenth century, by a certain farmer Dexter, of an Indian chief, Black Willy, for a suit of clothes. Probably the one party was as far as the other from foreseeing what use the place would be put to in the coming days. Nahant is now the resort of the Boston gentry in the hot months. Several of them have cottages on the promontory; and for those who are brought by the indefatigable steamboat, there is a stupendous hotel, the proportion of which to the place it is built on is as a man-of-war would be riding in one of the lovely Massachusetts ponds. Some middle-aged gentlemen remember the time when there was only one house on Nahant; and now there are balls in this hotel, where the extreme of dress and other luxury is seen, while the beach which connects the rock with the mainland is gay with hundreds of carriages and equestrians on bright summer mornings.

This beach consists of gray sand, beaten so hard by the action of the waves from the harbour on one side and the bay on the other, that the wheels of carriages make no impression, and the feet of horses resound as on the hardest road. It is the most delightful place for a drive or a gallop that can be imagined, except to the timorous, who may chance to find their horses frightened when the waves are boisterous on either hand at once. We entered upon it when the water was nearly at its height, and the passage was narrow. We had passed through the busy town of Lynn, and left its many hundreds of shoemaking families at their work behind us. We had passed many a field where the shoemaker, turned farmer for the season, was manuring his land with fishheads and offal; and now we burst into a region where no sounds of labour were heard, few signs of vegetation seen. We were alone with our own voices and the dashing of the sea, which seemed likely to take us off our feet.

When we reached Great Nahant, several picturesque cottages of the gentry came into view. All had piazzas, and several were adorned with bright creeping plants. No inhabitants were visible. Some rows of miserable young trees looked as if they were set up in order to be blown down. Many attempts have been made to raise forest-trees, but hitherto in vain. Some large willows grow in a partially sheltered spot, and under these are the boarding-houses of the place. The verdure is scanty, of course, and this is not the kind of beauty to be looked for in Nahant. The charms of the place are in the distant views, and among the picturesque and intricate rocks.

The variety contained within the circuit of a mile and a half is fully known only to the summer residents; but we saw something of it. At one moment we were prying into the recesses of the Swallows' Cave, listening to the rumbling of the waves within it, making discoveries of birds' nests, and looking up through its dark chasms to the sky. At the next we caught a view, between two rising grounds, of Boston, East Boston, and

Chelsea, sitting afar off upon the sunny waters. Here and there was a quiet strip of beach, where we sat watching the rich crop of weed swayed to and fro by the spreading and retreating of the translucent waters; and then at intervals we came to where the waves boil among the caverns, making a busy roar in the stillest hour of the stillest day. Here all was so chill and shadowy that the open sea, with its sunny sail and canopy of pearly clouds, looked as if it were quite another region, brought into view by some magic, but really lying on the other side of the world.

There is a luxurious bathing-place for ladies, a little beach so shut in by rocks, along the top of which runs a high fence, that the retirement is complete. Near it is the Spouting Horn, where we sat an unmeasured time, watching the rising tide spouting more magnificently every moment from the recess called The Horn. Every wave rushed in and splashed out again with a roar, the fragments of seaweed flying off like shot. A clever little boy belonging to our party was meantime abroad among the boarding-houses, managing to get us a dinner. He saved us all the trouble, and came to summon us, and show us the way. His father could not have managed better than he did.

We rambled about in the afternoon till we could no longer conceal from ourselves that the sun was getting low. We intended to describe a circuit in returning, so as to make as much of our road as possible lie along the beach. Never was the world bathed in a lovelier atmosphere than this evening. The rocks, particularly the island called Egg Rock, were of that soft lilach hue which harmonizes with the green sea on sunny evenings. While this light was brightest, we suddenly came upon a busy and remarkable scene--the hamlet of Swampscot, on the beach--the place where novel-readers go to look for Mucklebucket's cottage, so much does it resemble the beach scenes in the Antiquary. Boats were drawn up on the shore, the smallest boats, really for use, that I ever saw. They are flatbottomed, and are tenanted by one man, or, at most, two, when going out for cod. The men are much cramped in these tiny boats, and need exercise when they come to shore, and we saw a company playing at quoits at the close of their working-day. Many children were at play, their little figures seen in black relief against the sea, or trailing long shadows over the washed and glistening sands. Women were coming homeward with their milkpans or taking in their linen from the lines. All were busy, and all looked joyous. While my companions were bargaining for fish I had time to watch the singular scene; and when it was necessary to be gone, and we turned up into the darkening lanes away from the sea, we looked back to the last moment upon this busy reach of the bright shore.

The scenery of Massachusetts Bay is a treasure which Boston possesses over and above what is enjoyed by her sister cities of the East. New-York has a host of beauties about her, it is true; the North River, Hoboken, and Staten Island; but there is something in the singularity of Nahant and the wild beauty of Cape Ann more captivating than the crowded, fully-appropriated beauties round New-York. Philadelphia, Baltimore, and Washington have no environs which can compare with either of the Northern cities. The islands which lie off Charleston, and where the less opulent citizens repair for health in the hot months, are praised more for their freshness and fertility than for any romantic beauty; and the coasts of the South are flat and shoaly. The South has the advantage in the winter, when none but the hardiest fishermen can be

abroad to watch the march of the wintry storms over the Northern sea and sky; but in summer and autumn, when the Southerners who cannot afford to travel are panting and sickening in the glare among sands and swamps, the poorest of the citizens of Massachusetts may refresh himself amid the seabreezes on the bright promontories or cool caverns of his native shore.

Seasonable Menus for Week in November

The Project Gutenberg EBook of *American Cookery*, by Various

SUNDAY

Breakfast

Oranges
Corn Flakes with Hot Milk
Codfish Balls
Buttered Toast
Marmalade
Coffee

Dinner

Roast Leg of Lamb
Mashed Potatoes
Spinach with Egg
Creamed Turnips
Celery Salad
Date Souffle
Coffee

Supper

Oyster Stew
Crackers
Lettuce-and-Peanut Butter Sandwiches
Soft Gingerbread
Cocoa

MONDAY

Breakfast

Malt Breakfast Food, Top Milk
Scrambled Eggs with Tomato
Graham Muffins
Coffee

Luncheon

Potage Parmentier

Savory Hash, Meat and Potatoes
Tea Tarts
Russian Tea

Dinner

Planked Steak, Parkerhouse Style
Head Lettuce
King's Pudding, with Apple Jelly Sauce
Black Coffee

TUESDAY

Breakfast

Dates
Gluten Grits, Cream
Baked Potatoes
Bacon
Graham Toast, Butter
Coffee

Luncheon

Salmon a la Creole
Pulled Bread
Sweet Potato Croquettes
Pears in Syrup
Milk or Tea

Dinner

Stuffed Leg of Pork
Mashed Potatoes
Apple Sauce
Fig-and-Cranberry Pie
Coffee

WEDNESDAY

Breakfast

Winter Pears
Wheatena, Milk
Pork-and-Potato Hash
Raised Pancakes, Syrup
Coffee

Luncheon

Oyster-and-Onion Puree
Crusty Rolls
Apple-and-Nut Salad
Cocoa

Dinner

Skirt Steak with Raisin Sauce
Dry Deviled Parsnips
Baked Sweet Potatoes
Cherry Pie
Coffee

THURSDAY

Breakfast

Cream of Wheat, Cream
Tomato Omelet
Stirred Brown Bread
Coffee

Luncheon

Potato-and-Peanut Sausages
Cabbage-and-Celery Salad, with Cheese
Strawberry Gelatine Jelly
Tea

Dinner

Boiled Tongue
Steamed Potatoes
Creamed Carrots
Brussels Sprouts
Apple Pie a la Mode
Coffee

FRIDAY

Breakfast

Grapefruit
Cracked Wheat, Milk
Creamed Finnan Haddie
Hashed Brown Potatoes
Popovers
Coffee

Luncheon

Fruментy with Cream
Escaloped Chipped Beef and Potatoes
Chocolate Layer Cake
Cafe au Lait

Dinner

Halibut Steaks
Brother Jonathan

Creamed Cabbage
Chow-Chow
Apricot Puffs with Custard Sauce
Coffee

SATURDAY

Breakfast

Gravenstein Apples
Quaker Oats, Milk
Scrambled Eggs with Bacon
Steamed Brown Bread
Coffee

Luncheon

Puree of Baked Beans
Castilian Salad (Pineapple, Nuts, Apples, Grapes, Celery)
Swedish Pancakes with Aigre-Doux Sauce
Chocolate

Dinner

Veal Stew
Browned Sweet Potatoes
Lima Beans in Tomato Sauce
Leaf Lettuce with Fr. Dressing
Brown Betty with Foamy Sauce
Coffee

Menus for Thanksgiving Dinners

I

Three-Course Dinner for Small Family in Servantless House

Roast Chicken, stuffed with Chopped Celery and Oysters
Baked Sweet Potatoes
Boiled Onions

Salad
(Fine chopped apples and nuts in red apple cups)
Cream Dressing

Mince or Squash Pie a la mode
Sweet Cider
Coffee

II

A Simple Company Dinner of Six Courses_

Celery
Clam Bouillon, Saltines
Ripe Olives

Roast, Chestnut-Stuffed Turkey, Giblet Sauce
Buttered Asparagus
Glazed Sweet Potatoes
Moulded Cranberry Jelly

Chicken Salad in Salad Rolls

Thanksgiving Pudding
Hard Sauce

Chocolate Ice Cream
Strawberry Sauce

Assorted Fruit
Coffee

III

A Formal Company Dinner. Eight Courses_

Curled Celery
Oyster Soup, Bread Sticks
Radish Rosettes

Turbans of Flounder
Hollandaise Sauce
Potato Straws
Olives
Crusty Rolls
Salted Nuts

Capon a la Creme
(Stuffing of Potatoes, Mushrooms, Chestnuts, etc.)
Mashed Potatoes
Green Pea Timbales
Cranberry Sauce

Sweet Cider Frappe

Venison Steaks
Currant Jelly Sauce
Baked Parsnips

Apple-and-Grape Salad

Macaroon Pudding
Frozen Mince Pie
Hot Chocolate Sauce

Glacéed Walnuts

Fruit
Black Coffee

IV

Elaborate Formal Dinner. Ten Courses

Fruit Cocktail
Oysters on Half-shell
Brown Bread-and-Butter Sandwiches
Quartered Lemons

Clear Bouillon, Oysterettes
Radishes
Celery

Boiled Halibut
Potato Balls in Parsley Sauce
Sweet Pickles

Cauliflower au Gratin

Braised Turkey or Capon
Bread Stuffing
Giblet Gravy
Duchesse Potatoes
Spinach

Crystallized Ginger
Salted Pecans
Pineapple Fritters, Lemon Sauce

Granite of Cider and Apples

Cutlets of Duck, with Chopped Celery

Orange Salad

Pumpkin Pie
Raisin and Cranberry Tarts
Chocolate Parfait
Almond Cakes

Nuts
Raisins
Bonbons
Candied Orange Peel
Black Coffee

Recipes from The Project Gutenberg EBook of *Breakfast, Luncheon and Tea*, by Marion Harland

NAPLES SPONGE. +

6 eggs. Use the yolks for custard.

1 quart of milk.

2 _large_ cups sugar, and same quantity boiling water.

1 package gelatine soaked in 2 cups cold water.

Juice of a lemon and half the grated rind.

1 stale sponge-cake cut into smooth slices of uniform size.

2 glasses sherry.

Dissolve the soaked gelatine in the hot water. Add a cup of sugar and the lemon, and stir until the mixture is clear. Set aside in a shallow pan to cool. Meanwhile, make a custard of the milk, the yolks, and the other cup of sugar. Stir until it begins to thicken, when turn into a pitcher or pail, and put away until the “sponge” is ready for table. Whip the whites very stiff, and beat into them, a few spoonfuls at a time, the cooled gelatine. Spread the slices of cake, cut of a shape and size that will fit your mould, upon a flat dish, and wet them with the sherry. Rinse out a pudding or jelly mould with cold water, put a thick layer of the “sponge” in the bottom, pressing and smoothing it down, then one of cake, fitted in neatly; another of the sponge, proceeding in this order until all is used. The upper layer—the base when the sponge is turned out should be of cake.

Serve in a glass dish with some of the custard poured about the base, and send around more in a sauce-tureen or silver cream-pitcher.

Season the custard with vanilla.

NARCISSUS BLANC-MANGE.

1 quart milk.

Less than a pint rich cream, whipped with a _little_ powdered sugar.

1 package Cooper’s gelatine, soaked in 2 cups of cold water.

Yolks of 4 eggs, beaten light.

2 cups white sugar.

Vanilla and rose-water for flavoring.

Heat the milk scalding hot, stir in the gelatine and sugar. When all are dissolved, beat in the yolks, and heat until they are cooked. Two minutes, after the custard becomes scalding hot, should suffice. Turn out into a broad dish to cool. When it stiffens around the edges, transfer it, a few spoonfuls at a time, to a bowl, and whip vigorously with your egg-beater. Flavor with rose-water. It should be like a yellow sponge before you put it into the mould. This should be an open

one, _i.e._, with a cylinder in the centre. Rinse with cold water, and fill with the blanc-mange. It is best made the day before it is to be used. After turning it out upon a dish, fill the hollowed centre with whipped cream, flavored with vanilla and heaped up as high as it will stand. Pile more whipped cream about the base.

This dessert is named for the pretty yellow and white flower which came, with the earliest days of Spring, to the old-fashioned gardens.

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Recipes from The Project Gutenberg EBook of Sandwiches, by Sarah Tyson Heston Rorer

Nut-Butter Sandwiches

Mix one glass of nut butter with two tablespoonfuls of olive oil and one tablespoonful of chopped pimientos. Spread this on a slice of unbuttered brown bread, cover with finely-chopped cress or shredded lettuce, place on top a slice of buttered bread, press the two together, trim the crusts and cut into fingers an inch wide.

Fruit and Nut Sandwiches

These are perhaps the most attractive of all the sweet sandwiches.

Put through the meat chopper a quarter of a pound of almonds with half a pound of washed figs, the same quantity of dates, the same of raisins, and a pound of pecan nuts; put them through alternately so that they will be mixed in chopping. Pack the mixture into round baking powder tins, pressing it down firmly, and stand it aside over night. When wanted, dip the tin in hot water, loosen it with a knife and shake out the mixture. With a sharp knife cut into very thin slices and put them between two rounds of buttered bread. Serve with chocolate.

The combination may be varied; candied cherries, citron or any of the candied fruits may be substituted for the dates and figs. Brazilian and pine nuts may be substituted for a portion of the pecans.

Nut and Apple Sandwiches

Put a half cupful of _thick_ stewed apples into a bowl, add the grated yellow rind of quarter of an orange and one cupful of finely chopped mixed nuts. Spread this on saltines, Unedas, or any crisp cracker. Put on top another cracker and serve at once. These are very nice for children's parties. Of course one may use buttered bread, either white or brown.

Essays from The Project Gutenberg EBook of Is The Bible Worth Reading And Other Essays
by Lemuel K. Washburn

OUR ATTITUDE TOWARDS NATURE

The idea that Nature is to be worshipped, either as God, the unknown, or the incomprehensible, is being seriously questioned. We wish first to know what good such worship does. It cannot be of any benefit to Nature. Is it of any benefit to man? This is the only question to be answered.

Almost everybody is ready to say that man should not worship the sun, the moon, the stars, or any earthly thing; but a great many still think that man should worship the mysterious something of which everything is a manifestation. We have outgrown the worship of objects. We look upon the person who sees a God in any natural object as an idolater; as one whose mental vision is unilluminated by any true idea of the universe. But there is a demand that man shall worship God, or the unknown force or power in Nature that is the source of all things.

We admit the unknown quantity of the universe; but we do not see the necessity of worshipping it. We do not see any good in praying to it, or in singing to it. Nature is all a mystery and all the mystery there is, but why do we need to keep saying so in prayer and praise when the silent fact is ever before our eyes? We do not need to go down on our knees to every mysterious thing, and stay there. Let us freely and frankly confess that Nature is incomprehensible, and then go about our business like men, and try to learn what will help ourselves and our fellow-beings.

NATURE IN JUNE

We can hardly look anywhere in Nature without having the conviction grow in the mind that there are more or less superfluous things on this spot of the universe where our lot is cast, however it may be in Mars, Venus, Saturn, or any other of the Greek-named planets or any heavenly constellations with or without names. Just at this particular season of the year, the presence of weeds in the garden or on the farm raises a colossal doubt as to the fact of any wisdom guiding the divine voice when, in a majestic sweep of its omnipotent power on the third day of the drama of creation, it called into being the grass, the herb, the tree and whatsoever bears leaf or blade or flower. To those who have to pull the weeds out of the ground they are a curse of the first magnitude, and how a creator, who had common sense, could take pride in making such vegetable abortions as weeds we cannot comprehend. The most worthless things in Nature are the most prolific. Chickweed will cover an acre while clover is considering where it is best to go into business, and every pesky, nasty little weed will live and laugh when the queenly corn droops its head in the sun, and the beet and turnip cannot get nourishment enough to keep them alive.

It is just the same in the animal world. An immense quantity of useless beings go about on two and four legs or on none at all. The only excuse for the snake is that he was made to eat the toad; for the toad, that he was made to eat insects; for the insects—well, nobody has yet made a wholesome excuse for their existence, anyway. It looks as though one being in Nature was made simply to kill another being, and the last-made being, man, is the supreme killer of the whole lot. Take the whole range of wild

beasts, and find, if you can, aught but malice in their creation, if they were created. No plague ever destroyed hyenas and jackals. No one ever found a sick rattlesnake or an invalid hornet. The fittest survive? The fittest for what? To worry man, to make life miserable. Mosquitoes, wasps, fleas, reptiles and wild beasts, poisonous vines and shrubs, noxious blossoms whose perfume is the kiss of death, weeds that push and crowd decent plants until they die in utter despair—these are the sturdiest triumphs of the creative art. We cannot help wishing that the Lord-God had not rested on the seventh day, but instead, had gone around and destroyed about seven-eighths of what he had created. We might then have had quite a decent world to live in.

Man builds a home for her he loves, he plants beside it all that will make it beautiful to the eyes of his wife. He works and brings what is fair to adorn it, and makes every room a casket to hold the jewel of love. He looks at his home with pride, and feels that it is “the dearest spot on earth,” a refuge safe and secure. The cyclone comes and in a moment all is swept away. Man cannot trust the God of the winds.

There is no more terrible calamity that afflicts our globe at the present time than an earthquake. It comes without warning, by day or night, when man is at his place of business or when he is at rest. There is no way of preventing it, no way of preparing for it. It may wait a hundred, a thousand, years before it works its deadly ruin. But when it comes, havoc is left. An earthquake may be good for the earth, but it is almighty discouraging to the people that live on it. It may seek a beneficent end, but it goes to work in a cruel manner to accomplish it. Human life counts no more than the life of rats when an earthquake gets started. This infernal visitor does not seek a spot where its malevolence can be wrecked upon the rocks and hills. Oftener it goes to the thickly populated city or town and topples over houses and swallows up dwellings, with men, women and children. Does God send the earthquake? If he does, where is the evidence of his love for man? If He does not, who does?

It is pretty tough business to try to reconcile Nature with the idea of God’s watchful care over man. If the winds did not turn to hurricanes; if the sunshine did not make drought; if the rain never became a flood; if the sea never grew angry and sunk the ship; if the clouds always dissolved in gentle rain or in dew; if there were no wild beasts; no venomous snakes; no poisonous vines or flowers; if there were only what is bright and fair and good on earth and nothing that was dark and cold and repulsive, we might believe that a heavenly father had made the earth for a dwelling-place for man. But as it is, we have to think as well of Nature as possible and dodge her lightning, run from her water-spouts, keep out of the way of cyclones and shift for ourselves while here. What follows nobody knows. It may be better for us beyond this life; we hope it is no worse. And it may be only sleep, sleep with no dreams and no awakening. We should dislike to die on this side of the grave with the fear that we should come out on the other only to meet a hurricane in the teeth, or find an earthquake had been put under us to give us a shaking up the first thing on that “shining shore,” or to be caught in a furious torrent that poured down the sides of some heavenly mountain. Earth is a pretty good place when the conditions are all favorable, but if we are to have another life it ought to be a better one or else we should be saved the trouble of dying.

The feet of progress have always been shod by doubt.

A true man will not join anything that in any way abridges his freedom or robs him of his rights.

THIS NIGHT

Project Gutenberg's *Jewish Children*, by Sholem Naumovich Rabinovich

"TO MY DEAR SON,

"I send you--'_roubles_,' and beg of you, my dear son, to do me the favour, and come home for the Passover Festival. It is a disgrace to me in my old age. We have one son, an only child, and we are not worthy to see him. Your mother also asks me to beg of you to be sure to come home for the Passover. And you must know that Busie is to be congratulated. She is now betrothed. And if the Lord wills it, she is going to be married on the Sabbath after the Feast of Weeks.

"From me,

"YOUR FATHER."

This is the letter my father wrote to me. For the first time a sharp letter--for the first time in all those years since we had parted. And we had parted from one another, father and I, in silence, without quarrelling. I had acted in opposition to his wishes. I would not go his road, but my own road. I went abroad to study. At first my father was angry. He said he would never forgive me. Later, he began to send me money.

"I send you--'_roubles_,'" he used to write, "and your mother sends you her heartiest greetings."

Short, dry letters he wrote me. And my replies to him were also short and dry:

"I have received your letter with the--'_roubles_.' I thank you, and I send my mother my heartiest greetings."

Cold, terribly cold were our letters to one another. Who had time to realize where I found myself in the world of dreams in which I lived? But now my father's letter woke me up. Not so much his complaint that it was a shame I should have left him alone in his old age--that it was a disgrace for him that his only son should be away from him. I will confess it that this did not move me so much. Neither did my mother's pleadings with me that I should have pity on her and come home for the Passover Festival. Nothing took such a strong hold of me as the last few

lines of my father's letter. "And you must know that Busie is to be congratulated."

Busie! The same Busie who has no equal anywhere on earth, excepting in the "Song of Songs"--the same Busie who is bound up with my life, whose childhood is interwoven closely with my childhood--the same Busie who always was to me the bewitched Queen's Daughter of all my wonderful fairy tales--the most wonderful princess of my golden dreams--this same Busie is now betrothed, is going to be married on the Sabbath after the Feast of Weeks? Is it true that she is going to be married, and not to me, but to some one else?

* * *

Who is Busie--what is she? Oh, do you not know who Busie is? Have you forgotten? Then I will tell you her biography all over again, briefly, and in the very same words I used when telling it you once on a time, years ago.

I had an older brother, Benny. He was drowned. He left after him a water-mill, a young widow, two horses, and one child. The mill was neglected; the horses were sold; the young widow married again and went away somewhere, far; and the child was brought home to our house.

That child was Busie.

And Busie was beautiful as the lovely Shulamite of the "Song of Songs." Whenever I saw Busie I thought of the Shulamite of the "Song of Songs." And whenever I read the "Song of Songs" Busie's image came up and stood before me.

Her name is the short for Esther-Liba: Libusa: Busie. She grew up together with me. She called my father "father," and my mother "mother." Everybody thought that we were sister and brother. And we grew up together as if we were sister and brother. And we loved one another as if we were sister and brother.

Like a sister and a brother we played together, and we hid in a corner--we two; and I used to tell her the fairy tales I learnt at school--the tales which were told me by my comrade Sheika, who knew everything, even "_Kaballa_." I told her that by means of "_Kaballa_," I could do wonderful tricks--draw wine from a stone, and gold from a wall. By means of "_Kaballa_," I told her, I could manage that we two should rise up into the clouds, and even higher than the clouds. Oh, how she loved to hear me tell my stories! There was only one story which Busie did not like me to tell--the story of the Queen's Daughter, the princess who had been bewitched, carried off from under the wedding canopy, and put into a palace of crystal for seven years. And I said that I was flying off to set her free.... Busie loved to hear every tale excepting that one about the bewitched Queen's Daughter whom I was flying off to set free.

"You need not fly so far. Take my advice, you need not."

This is what Busie said to me, fixing on my face her beautiful blue "Song of Songs" eyes.

That is who and what Busie is.

And now my father writes me that I must congratulate Busie. She is betrothed, and will be married on the Sabbath after the Feast of Weeks. She is some one's bride--some one else's, not mine!

I sat down and wrote a letter to my father, in answer to his.

"TO MY HONOURED AND DEAR FATHER,

"I have received your letter with the--'_roubles_.' In a few days, as soon as I am ready, I will go home, in time for the first days of the Passover Festival--or perhaps for the latter days. But I will surely come home. I send my heartiest greetings to my mother. And to Busie I send my congratulations. I wish her joy and happiness.

"From me,

"YOUR SON."

It was a lie. I had nothing to get ready; nor was there any need for me to wait a few days. The same day on which I received my father's letter and answered it, I got on the train and flew home. I arrived home exactly on the day before the Festival, on a warm, bright Passover eve.

I found the village exactly as I had left it, once on a time, years ago. It was not changed by a single hair. Not a detail of it was different. It was the same village. The people were the same. The Passover eve was the same, with all its noise and hurry and flurry and bustle. And out of doors it was also the same Passover eve as when I had been at home, years ago.

There was only one thing missing--the "Song of Songs." No; nothing of the "Song of Songs" existed any longer. It was not now as it had been, once on a time, years ago. Our yard was not any more King Solomon's vineyard, of the "Song of Songs." The wood and the logs and the boards that lay scattered around the house were no longer the cedars and the fir trees. The cat that was stretched out before the door, warming herself in the sun, was no more a young hart, or a roe, such as one comes upon in the "Song of Songs." The hill on the other side of the synagogue was no more the Mountain of Lebanon. It was no more one of the Mountains of Spices.... The young women and girls who were standing out of doors, washing and scrubbing and making everything clean for the Passover--they were not any more the Daughters of Jerusalem of whom mention is made in the "Song of Songs." ... What has become of my "Song of Songs" world that was, at one time, so fresh and clear and bright--the world that was as fragrant as though filled with spices?

* * *

I found my home exactly as I had left it, years before. It was not altered by a hair. It was not different in the least detail. My father, too, was the same. Only his silvery-white beard had become a little more silvery. His broad white wrinkled forehead was now a little more wrinkled. This was probably because of his cares.... And my mother was the same as when I saw her last. Only her ruddy cheeks were now slightly

sallow. And I imagined she had grown smaller, shorter and thinner. Perhaps I only imagined this because she was now slightly bent. And her eyes were slightly enflamed, and had little puffy bags under them, as if they were swollen. Was it from weeping, perhaps?...

For what reason had my mother been weeping? For whom? Was it for me, her only son who had acted in opposition to his father's wishes? Was it because I would not go the same road as my father, but took my own road, and went off to study, and did not come home for such a long time?... Or did my mother weep for Busie, because she was getting married on the Sabbath after the Feast of Weeks?

Ah, Busie! She was not changed by so much as a hair. She was not different in the least detail. She had only grown up--grown up and also grown more beautiful than she had been, more lovely. She had grown up exactly as she had promised to grow, tall and slender, and ripe, and full of grace. Her eyes were the same blue "Song of Songs" eyes, but more thoughtful than in the olden times. They were more thoughtful and more dreamy, more careworn and more beautiful "Song of Songs" eyes than ever. And the smile on her lips was friendly, loving, homely and affectionate. She was quiet as a dove--quiet as a virgin.

When I looked at the Busie of today, I was reminded of the Busie of the past. I recalled to mind Busie in her new little holiday frock which my mother had made for her, at that time, for the Passover. I remembered the new little shoes which my father had bought for her, at that time, for the Passover. And when I remembered the Busie of the past, there came back to me, without an effort on my part, all over again, phrase by phrase, and chapter by chapter, the long-forgotten "Song of Songs."

"Thou hast doves' eyes within thy locks: thy hair is as a flock of goats, that appear from mount Gilead.

"Thy teeth are like a flock of sheep that are even shorn, which come up from the washing: whereof every one bear twins, and none is barren among them.

"Thy lips are like a thread of scarlet, and thy speech is comely: thy temples are like a piece of pomegranate within thy locks."

I look at Busie, and once again everything is as in the "Song of Songs," just as it was in the past, once on a time, years before.

* * *

"Busie, am I to congratulate you?"

She does not hear me. But why does she lower her eyes? And why have her cheeks turned scarlet? No, I must bid her joy--I must!

"I congratulate you, Busie."

"May you live in happiness," she replies.

And that is all. I could ask her nothing. And to talk with her? There was nowhere where I might do that. My father would not let me talk with her. My mother hindered me. Our relatives prevented it. The rest of the

family, the friends, neighbours and acquaintances who flocked into the house to welcome me, one coming and one going--they would not let me talk with Busie either. They all stood around me. They all examined me, as if I were a bear, or a curious creature from another world. Everybody wanted to see and hear me--to know how I was getting on, and what I was doing. They had not seen me for such a long time.

"Tell us something new. What have you seen? What have you heard?"

And I told them the news--all that I had seen and all that I had heard. At the same time I was looking at Busie. I was searching for her eyes. And I met her eyes--her big, deep, careworn, thoughtful, beautiful blue "Song of Songs" eyes. But her eyes were dumb, and she herself was dumb. Her eyes told me nothing--nothing at all. And there arose to my memory the words I had learnt in the past, the "Song of Songs" sentence by sentence--

"A garden inclosed is my sister, my spouse: a spring shut up, a fountain sealed."

* * *

And a storm arose within my brain, and a fire began to burn within my heart. This terrible fire did not rage against anybody, only against myself--against myself and against my dreams of the past--the foolish, boyish, golden dreams for the sake of which I had left my father and my mother. Because of those dreams I had forgotten Busie. Because of them I had sacrificed a great, great part of my life; and because of them, and through them I had lost my happiness--lost it, lost it for ever!

Lost it for ever? No, it cannot be--it cannot be! Have I not come back--have I not returned in good time?... If only I could manage to talk with Busie, all alone with her! If only I could get to say a few words to her. But how could I speak with her, all alone, the few words I longed to speak, when everybody was present--when the people were all crowding around me? They were all examining me as if I were a bear, or a curious creature from another world. Everybody wanted to see and hear me--to know how I was getting on, and what I was doing. They had not seen me for such a long time!

More intently than any one else was my father listening to me. He had a Holy Book open in front of him, as always. His broad forehead was wrinkled up, as always. He was looking at me from over his silver spectacles, and was stroking the silver strands of his silvery-white beard, as always. And I imagined that he was looking at me with other eyes than he used to look. No, it was not the same look as always. He was reproaching me. I felt that my father was offended with me. I had acted contrary to his wishes. I had refused to go his road, and had taken a road of my own choosing....

My mother, too, was standing close behind me. She came out of the kitchen. She left all her work, the preparations for the Passover, and she was listening to me with tears in her eyes. Though her face was still smiling, she wiped her eyes in secret with the corners of her apron. She was listening to me attentively. She was staring right into my mouth; and she was swallowing, yes, swallowing every word that I said.

And Busie also stood over against me. Her hands were folded on her bosom. And she was listening to me just as the others were. Along with them, she was staring right into my mouth. I looked at Busie. I tried to read what was in her eyes; but I could read nothing there, nothing at all, nothing at all.

"Tell more. Why have you grown silent?" my father asked me.

"Leave him alone. Did you ever see the like?" put in my mother hastily.

"The child is tired. The child is hungry, and he goes on saying to him:

"Tell! Tell! Tell! And tell!"

* * *

The people began to go away by degrees. And we found ourselves alone, my father and my mother, Busie and I. My mother went off to the kitchen. In a few minutes she came back, carrying in her hand a beautiful Passover plate--a plate I knew well. It was surrounded by a design of big green fig leaves.

"Perhaps you would like something to eat, Shemak? It is a long time to wait until the '_Seder_'."

That is what my mother said to me, and with so much affection, so much loyalty and so much passionate devotion. And Busie got up, and with silent footfalls, brought me a knife and fork--the well-known Passover knife and fork. Everything was familiar to me. Nothing was changed, nor different by a hair. It was the same plate with the big green fig leaves; the same knife and fork with the white bone handles. The same delicious odour of melted goose-fat came in to me from the kitchen; and the fresh Passover cake had the same Garden-of-Eden taste. Nothing was changed by a hair. Nothing was different in the least detail.

Only, in the olden times, we ate together on the Passover eve, Busie and I, off the same plate. I remember that we ate off the same beautiful Passover plate that was surrounded by a design of big green fig leaves. And, at that time, my mother gave us nuts. I remember how she filled our pockets with nuts. And, at that time, we took hold of one another's hands, Busie and I. And I remember that we let ourselves go, in the open. We flew like eagles. I ran; she ran after me. I leaped over the logs of wood; she leaped after me. I was up; she was up. I was down; she was down.

"Shemak! How long are we going to run, Shemak?"

So said Busie to me. And I answered her in the words of the "Song of Songs": "Until the day break, and the shadows flee away."

* * *

This was once on a time, years ago. Now Busie is grown up. She is big. And I also am grown up. I also am big. Busie is betrothed. She is betrothed to some one--to some one else, and not to me.... And I want to be alone with Busie. I want to speak a few words with her. I want to hear her voice. I want to say to her, in the words of the "Song of Songs": "Let me see thy countenance, let me hear thy voice."

And I imagine that her eyes are answering my unspoken words, also in the words of the "Song of Songs." "Come, my beloved, let us go forth into the fields; let us lodge in the villages.

"Let us get up early to the vineyards; let us see if the vine flourish, whether the tender grape appear, and the pomegranates bud forth: there will I give thee my loves."

I snatched a glimpse through the window to see what was going on out of doors. Ah, how lovely it was! How beautiful! How fragrant of the Passover! How like the "Song of Songs"! It was a sin to be indoors. Soon the day would be at an end. Lower and lower sank the sun, painting the sky the colour of guinea-gold. The gold was reflected in Busie's eyes. They were bathed in gold. Soon, soon, the day would be dead. And I would have no time to say a single word to Busie. The whole day was spent in talking idly with my father and my mother, my relatives and friends, telling them of all that I had heard, and all that I had seen. I jumped up, and went over to the window. I looked out of it. As I was passing her, I said quickly to Busie:

"Perhaps we should go out for a while? It is so long since I was at home. I want to see everything. I want to have a look at the village."

* * *

Can you tell me what was the matter with Busie? Her cheeks were at once enflamed. They burned with a great fire. She was as red as the sun that was going down in the west. She threw a glance at my father. I imagined she wanted to hear what my father would say. And my father looked at my mother, over his silver spectacles. He stroked the silver strands of his silvery-white beard, and said casually, to no one in particular:

"The sun is setting. It's time to put on our Festival garments, and to go into the synagogue to pray. It is time to light the Festival candles. What do you say?"

No! It seemed that I was not going to get the chance of saying anything to Busie that day. We went off to change our garments. My mother had finished her work. She had put on her new silk Passover gown. Her white hands gleamed. No one has such beautiful white hands as my mother. Soon she will make the blessing over the Festival candles. She will cover her eyes with her snow-white hands and weep silently, as she used to do once on a time, years ago. The last lingering rays of the setting sun will play on her beautiful, transparent white hands. No one has such beautiful, white transparent hands as my mother.

But what is the matter with Busie? The light has gone out of her face just as it is going out of the sun that is slowly setting in the west, and as it is going out of the day that is slowly dying. But she is beautiful, and graceful as never before. And there is a deep sadness in her beautiful blue "Song of Songs" eyes. They are very thoughtful, are Busie's eyes.

What is Busie thinking of now? Of the loving guest for whom she had waited, and who had come flying home so unexpectedly, after a long, long absence from home?... Or is she thinking of her mother, who married

again, and went off somewhere far, and who forgot that she had a daughter whose name was Busie?... Or is Busie now thinking of her betrothed, her affianced husband whom, probably, my father and mother were compelling her to marry against her own inclinations?... Or is she thinking of her marriage that is going to take place on the Sabbath after the Feast of Weeks, to a man she does not know, and does not understand? Who is he, and what is he?... Or, perhaps, on the contrary, I am mistaken? Perhaps she is counting the days from the Passover to the Feast of Weeks, until the Sabbath after the Feast of Weeks, because the man she is going to marry on that day is her chosen, her dearest, her beloved? He will lead her under the wedding canopy. To him she will give all her heart, and all her love. And to me? Alas! Woe is me! To me she is no more than a sister. She always was to me a sister, and always will be.... And I imagine that she is looking at me with pity and with regret, and that she is saying to me, as she said to me, once on a time, years ago, in the words of the "Song of Songs:"

"O that thou wert as my brother."

"Why are you not my brother?"

What answer can I make her to these unspoken words? I know what I should like to say to her. Only let me get the chance to say a few words to her, no more than a few.

No! I shall not be able to speak a single word with Busie this day--nor even half a word. Now she is rising from her chair. She is going with light, soft footfalls to the cupboard. She is getting the candles ready for my mother, fixing them into the silver candlesticks. How well I know these silver candlesticks! They played a big part in my golden, boyish dreams of the bewitched Queen's Daughter whom I was going to rescue from the palace of crystal. The golden dreams, and the silver candlesticks, and the Sabbath candles, and my mother's beautiful, white transparent hands, and Busie's beautiful blue "Song of Songs" eyes, and the last rays of the sun that is going down in the west--are they not all one and the same, bound together and interwoven for ever?...

"Ta!" exclaimed my father, looking out of the window, and winking to me that it was high time to change and go into the synagogue to pray.

And we changed our garments, my father and I, and we went into the synagogue to say our prayers.

* * *

Our synagogue, our old, old synagogue was not changed either, not by so much as a hair. Not a single detail was different. Only the walls had become a little blacker; the reader's desk was older; the curtain before the Holy Ark had drooped lower; and the Holy Ark itself had lost its polish, its newness.

Once on a time, our synagogue had appeared in my eyes like a small copy of King Solomon's Temple. Now the small temple was leaning slightly to one side. Ah, what has become of the brilliance, and the holy splendour of our little old synagogue? Where now are the angels which used to flutter about, under the carved wings of the Holy Ark on Friday evenings, when we were reciting the prayers in welcome of the Sabbath,

and on Festival evenings when we were reciting the beautiful Festival prayers?

And the members of the congregation were also very little changed. They were only grown a little older. Black beards were now grey. Straight shoulders were stooped a little. The satin holiday coats that I knew so well were more threadbare, shabbier. White threads were to be seen in them and yellow stripes. Melech the Cantor sang as beautifully as in the olden times, years ago. Only today his voice is a little husky, and a new tone is to be heard in the old prayers he is chanting. He weeps rather than sings the words. He mourns rather than prays. And our rabbi? The old rabbi? He has not changed at all. He was like the fallen snow when I saw him last, and today is like the fallen snow. He is different only in one trifling respect. His hands are trembling. And the rest of his body is also trembling, from old age, I should imagine. Asreal the Beadle--a Jew who had never had the least sign of a beard--would have been exactly the same man as once on a time, years before, if it were not for his teeth. He has lost every single tooth he possessed; and with his fallen-in cheeks, he now looks much more like a woman than a man. But for all that, he can still bang on the desk with his open hand. True, it is not the same bang as once on a time. Years ago, one was almost deafened by the noise of Asreal's hand coming down on the desk. Today, it is not like that at all. It seems that he has not any longer the strength he used to have. He was once a giant of a man.

Once on a time, years ago, I was happy in the little old synagogue; I remember that I felt happy without an end--without a limit! Here, in the little synagogue, years ago, my childish soul swept about with the angels I imagined were flying around the carved wings of the Holy Ark. Here, in the little synagogue, once on a time, with my father and all the other Jews, I prayed earnestly. And it gave me great pleasure, great satisfaction.

* * *

And now, here I am again in the same old synagogue, praying with the same old congregation, just as once on a time, years ago. I hear the same Cantor singing the same melodies as before. And I am praying along with the congregation. But my thoughts are far from the prayers. I keep turning over the pages of my prayer-book idly, one page after the other. And--I am not to blame for it--I come upon the pages on which are printed the "Song of Songs." And I read:

"Behold, thou art fair, my love; behold, thou art fair; thou hast dove's eyes within thy locks."

I should like to pray with the congregation, as they are praying, and as I used to pray, once on a time. But the words will not rise to my lips. I turn over the pages of my prayer-book, one after the other, and--I am not to blame for it--again I turn up the "Song of Songs," at the fifth chapter.

"I am come into my garden, my sister, my spouse."

And again:

"I have gathered my myrrh with my spice; I have eaten my honeycomb with

my honey; I have drunk my wine with my milk."

But what am I talking about? What am I saying? The garden is not mine. I shall not gather any myrrh, nor smell any spices. I shall eat no honey, and drink no wine. The garden is not my garden. Busie is not my betrothed. Busie is betrothed to some one else--to some one else, and not to me.... And there rages within me a hellish fire. Not against Busie. Not against anybody at all. No; only against myself alone. Surely! How could I have stayed away from Busie for such a long time? How could I have allowed it--that Busie should be taken away from me, and given to some one else? Had she not written many letters to me, often, and given me to understand that she hoped to see me shortly?... Had I not myself promised to come home, and then put off going, from one Festival to another, so many times until, at last, Busie gave up writing to me?

* * *

"Good '_Yom-Tov_'! This is my son!"

That was how my father introduced me to the men of the congregation at the synagogue, after prayers. They examined me on all sides. They greeted me with, "Peace be unto you!" and accepted my greeting, in return, "Unto you be peace!" as if it were no more than their due.

"This is my son...."

"That is your son? Here is a 'Peace be unto you!'"

In my father's words, "This is my son," there were many shades of feeling, many meanings--joy, and happiness, and reproach. One might interpret the words as one liked. One might argue that he meant to say:

"What do you think? This is really my _son_."

Or one might argue that he meant to say:

"Just imagine it--_this_ is my son!"

I could feel for my father. He was deeply hurt. I had opposed his wishes. I had not gone his road, but had taken a road of my own. And I had caused him to grow old before his time. No; he had not forgiven me yet. He did not tell me this. But his manner saved him the trouble of explaining himself. I felt that he had not forgiven me yet. His eyes told me everything. They looked at me reproachfully from over his silver-rimmed spectacles, right into my heart. His soft sigh told me that he had not forgiven me yet--the sigh which tore itself, from time to time, out of his weak old breast....

We walked home from the synagogue together, in silence. We got home later than any one else. The night had already spread her wings over the heavens. Her shadow was slowly lowering itself over the earth. A silent, warm, holy Passover night it was--a night full of secrets and mysteries, full of wonder and beauty. The holiness of this night could be felt in the air. It descended slowly from the dark blue sky.... The stars whispered together in the mysterious voices of the night. And on all sides of us, from the little Jewish houses came the words of the

"_Haggadah_": "We went forth from Egypt on this night."

With hasty, hasty steps I went towards home, on this night. And my father barely managed to keep up with me. He followed after me like a shadow.

"Why are you flying?" he asked of me, scarcely managing to catch his breath.

Ah, father, father! Do you not know that I have been compared with "a roe or a young hart upon the mountains of spices"?... The time is long for me, father, too long. The way is long for me, father, too long. When Busie is betrothed to some one--to some one else and not to me, the hours and the roads are too long for me.... I am compared with "a roe or a young hart upon the mountains of spices."

That is what I wanted to say to my father, in the words of the "Song of Songs." I did not feel the ground under my feet. I went towards home with hasty, hasty steps, on this night. My father barely managed to keep up with me. He followed after me like a shadow.

* * *

With the same "Good '_Yom-Tov_'" which we had said on coming in from the synagogue on such a night as this, years ago, we entered the house on this night, my father and I.

With the same "Good '_Yom-Tov_', 'good year,'" with which my mother and Busie used to welcome us, on such a night as this, once on a time, years ago, they again welcomed us on this night, my father and me.

My mother, the Queen of the evening, was dressed in her royal robes of silk; and the Queen's Daughter, Busie, was dressed in her snow-white frock. They made the same picture which they had made, once on a time, years ago. They were not altered by as much as a hair. They were not different in a single detail.

As it had been years ago, so it was now. On this night, the house was full of grace. A peculiar beauty--a holy, festive, majestic loveliness descended upon our house. A holy, festive glamour hung about our house on this night. The white table-cloth was like driven snow. And everything which was on the table gleamed and glistened. My mother's Festival candles shone out of the silver candlesticks. The Passover wine greeted us from out the sparkling bottles. Ah, how pure, how simple the Passover cakes looked, peeping innocently from under their beautiful cover! How sweetly the horse-radish smiled to me! And how pleasant was the "mortar"--the mixture of crushed nuts and apples and wine which symbolized the mortar out of which the Israelites made bricks in Egypt, when they were slaves! And even the dish of salt-water was good to look upon.

Proudly and haughtily stood the throne on which my father, the King of the night, was going to recline. A glory shone forth from my mother's countenance, such as I always saw shining forth from it on such a night. And the Queen's Daughter, Busie, was entirely, from her head to her heels, as if she really belonged to the "Song of Songs." No! What am I saying? She was the "Song of Songs" itself.

The only pity was that the King's son was put sitting so far away from the Queen's Daughter. I remember that they once sat at the Passover ceremony in a different position. They were together, once on a time, years ago. One beside the other they sat....

I remember that the King's Son asked his father "The Four Questions." And I remember that the Queen's Daughter stole from his Majesty the "Afikomen"--the pieces of Passover cake he had hidden away to make the special blessing over. And I? What had I done then? How much did we laugh at that time! I remember that, once on a time, years ago, when the "Seder" was ended, the Queen had taken off her royal garment of silk, and the King had taken off his white robes, and we two, Busie and I, sat together in a corner playing with the nuts which my mother had given us. And there, in the corner, I told Busie a story--one of the fairy tales I had learnt at school from my comrade Sheika, who knew everything in the world. It was the story of the beautiful Queen's Daughter who had been taken from under the wedding canopy, bewitched, and put into a palace of crystal for seven years on end, and who was waiting for some one to raise himself up into the air by pronouncing the Holy Name, flying above the clouds, across hills, and over valleys, over rivers, and across deserts, to release her, to set her free.

* * *

But all this happened once on a time, years ago. Now the Queen's Daughter is grown up. She is big. And the King's Son is grown up. He is big. And we two are seated in such a way, so pitilessly, that we cannot even see one another. Imagine it to yourself! On the right of his majesty sat the King's Son. On the left of her majesty sat the Queen's Daughter!... And we recited the "Haggadah," my father and I, at the top of our voices, as once on a time, years ago, page after page, and in the same sing-song as of old. And my mother and Busie repeated the words after us, softly, page after page, until we came to the "Song of Songs." I recited the "Song of Songs" together with my father, as once on a time, years ago, in the same melody as of old, passage after passage. And my mother and Busie repeated the words after us, softly, passage after passage, until the King of the night, tired out, after the long Passover ceremony, and somewhat dulled by the four cups of raisin wine, began to doze off by degrees. He nodded for a few minutes, woke up, and went on singing the "Song of Songs." He began in a loud voice:

"Many waters cannot quench love."....

And I caught him up, in the same strain:

"Neither can floods drown it."

The recital grew softer and softer with us both, as the night wore on, until at last his majesty fell asleep in real earnest. The Queen touched him on the sleeve of his white robe. She woke him with a sweet, affectionate gentleness, and told him he should go to bed. In the meantime, Busie and I got the chance of saying a few words to one another. I got up from my place and went over close beside her. And we stood opposite one another for the first time, closely, on this night. I pointed out to her how rarely beautiful the night was.

"On such a night," I said to her, "it is good to go walking."

She understood me, and answered me, with a half-smile by asking:

"On such a night?" ...

And I imagined that she was laughing at me. That was how she used to laugh at me, once on a time, years ago.... I was annoyed. I said to her:

"Busie, we have something to say to one another--we have much to talk about."

"Much to talk about?" she replied, echoing my words.

And again I imagined that she was laughing at me.... I put in quickly:

"Perhaps I am mistaken? Maybe I have nothing at all to say to you now?"

These words were uttered with so much bitterness that Busie ceased from smiling, and her face grew serious.

"Tomorrow," she said to me, "tomorrow we will talk." ...

And my eyes grew bright. Everything about me was bright and good and joyful. Tomorrow! Tomorrow we will talk! Tomorrow! Tomorrow!...

I went over nearer to her. I smelt the fragrance of her hair, the fragrance of her clothes--the same familiar fragrance of her. And there came up to my mind the words of the "Song of Songs":

"Thy lips, O my spouse, drop as the honeycomb: honey and milk are under thy tongue; and the smell of thy garments is like the smell of Lebanon." ...

And all our speech this night was the same--without words. We spoke together with our eyes--with our eyes.

* * *

"Busie, good-night," I said to her softly.

It was hard for me to go away from her. The one God in Heaven knew the truth--how hard it was.

"Good-night," Busie made answer.

She did not stir from the spot. She looked at me, deeply perplexed, out of her beautiful blue "Song of Songs" eyes.

I said "good-night" to her again. And she again said "good-night" to me. My mother came in and led me off to bed. When we were in my room, my mother smoothed out for me, with her beautiful, snow-white hands, the white cover of my bed. And her lips murmured:

"Sleep well, my child, sleep well."

Into these few words she poured a whole ocean of tender love--the love

which had been pent up in her breast the long time I had been away from her. I was ready to fall down before her, and kiss her beautiful white hands.

"Good-night," I murmured softly to her.

And I was left alone--all alone, on this night.

* * *

I was all alone on this night--all alone on this silent, soft, warm, early spring night.

I opened my window and looked out into the open, at the dark blue night sky, and at the shimmering stars that were like brilliants. And I asked myself:

"Is it then true? Is it then true?..."

"Is it then true that I have lost my happiness--lost my happiness for ever?

"Is it then true that with my own hands I took and burnt my wonderful dream-palace, and let go from me the divine Queen's Daughter whom I had myself bewitched, once on a time, years ago? Is it then so? Is it so? Maybe it is not so? Perhaps I have come in time? 'I am come into my garden, my sister, my spouse.'" ...

I sat at the open window for a long time on this night. And I exchanged whispered secrets with the silent, soft, warm early spring night that was full--strangely full--of secrets and mysteries....

On this night, I made a discovery--

That I loved Busie with that holy, burning love which is so wonderfully described in our "Song of Songs." Big fiery letters seemed to carve themselves out before my eyes. They formed themselves into the words which I had only just recited, my father and I--the words of the "Song of Songs." I read the carved words, letter by letter.

"Love is strong as death; jealousy is cruel as the grave: the coals thereof are coals of fire, which hath a most vehement flame."

On this night, I sat down at my open window, and I asked of the night which was full of secrets and mysteries, that she should tell me this secret:

"Is it true that I have lost Busie for ever? Is it then true?" ...

But she is silent--this night of secrets and mysteries. And the secret must remain a secret for me--until the morrow.

"Tomorrow," Busie had said to me, "we will talk."

Ah! Tomorrow we will talk!...

Only let the night go by--only let it vanish, this night!

This night! This night!

Poetry from the Project Gutenberg etext of Golden Numbers, by Various

Night

How beautiful is night!
A dewy freshness fills the silent air;
No mist obscures, nor cloud, nor speck, nor stain,
Breaks the serene of heaven:
In full-orb'd glory yonder Moon divine
Rolls through the dark-blue depths.
Beneath her steady ray
The desert-circle spreads,
Like the round ocean, girdled with the sky.
How beautiful is night!

ROBERT SOUTHEY.

Nikolina

O tell me, little children, have you seen her--
The tiny maid from Norway, Nikolina?
O, her eyes are blue as cornflow'rs mid the corn,
And her cheeks are rosy red as skies of morn!

Nikolina! swift she turns if any call her,
As she stands among the poppies, hardly taller,
Breaking off their scarlet cups for you,
With spikes of slender larkspur, burning blue.

In her little garden many a flower is growing--
Red, gold, and purple in the soft wind blowing
But the child that stands amid the blossoms gay
Is sweeter, quainter, brighter e'en than they.

CELIA THAXTER.

The Noble Nature

It is not growing like a tree
In bulk doth make Man better be;
Or standing long an oak, three hundred year,
To fall a log at last, dry, bald, and sere:
A lily of a day
Is fairer far in May,
Although it fall and die that night,--
It was the plant and flower of Light:

In small proportions we just beauties see,
And in short measures life may perfect be.

BEN JONSON.

NAM-BOK THE UNVERACIOUS

The Project Gutenberg eBook, *Children of the Frost*, by Jack London

"A bidarka, is it not so? Look! a bidarka, and one man who drives clumsily with a paddle!"

Old Bask-Wah-Wan rose to her knees, trembling with weakness and eagerness, and gazed out over the sea.

"Nam-Bok was ever clumsy at the paddle," she maundered reminiscently, shading the sun from her eyes and staring across the silver-spilled water. "Nam-Bok was ever clumsy. I remember...."

But the women and children laughed loudly, and there was a gentle mockery in their laughter, and her voice dwindled till her lips moved without sound.

Koogah lifted his grizzled head from his bone-carving and followed the path of her eyes. Except when wide yaws took it off its course, a bidarka was heading in for the beach. Its occupant was paddling with more strength than dexterity, and made his approach along the zigzag line of most resistance. Koogah's head dropped to his work again, and on the ivory tusk between his knees he scratched the dorsal fin of a fish the like of which never swam in the sea.

"It is doubtless the man from the next village," he said finally, "come to consult with me about the marking of things on bone. And the man is a clumsy man. He will never know how."

"It is Nam-Bok," old Bask-Wah-Wan repeated. "Should I not know my son?" she demanded shrilly. "I say, and I say again, it is Nam-Bok."

"And so thou hast said these many summers," one of the women chided softly. "Ever when the ice passed out of the sea hast thou sat and watched through the long day, saying at each chance canoe, 'This is Nam-Bok.' Nam-Bok is dead, O Bask-Wah-Wan, and the dead do not come back. It cannot be that the dead come back."

"Nam-Bok!" the old woman cried, so loud and clear that the whole village was startled and looked at her.

She struggled to her feet and tottered down the sand. She stumbled over a baby lying in the sun, and the mother hushed its crying and hurled harsh words after the old woman, who took no notice. The children ran down the beach in advance of her, and as the man in the bidarka drew closer, nearly capsizing with one of his ill-directed strokes, the women followed. Koogah dropped his walrus tusk and went

also, leaning heavily upon his staff, and after him loitered the men in twos and threes.

The bidarka turned broadside and the ripple of surf threatened to swamp it, only a naked boy ran into the water and pulled the bow high up on the sand. The man stood up and sent a questing glance along the line of villagers. A rainbow sweater, dirty and the worse for wear, clung loosely to his broad shoulders, and a red cotton handkerchief was knotted in sailor fashion about his throat. A fisherman's tam-o'-shanter on his close-clipped head, and dungaree trousers and heavy brogans, completed his outfit.

But he was none the less a striking personage to these simple fisherfolk of the great Yukon Delta, who, all their lives, had stared out on Bering Sea and in that time seen but two white men,--the census enumerator and a lost Jesuit priest. They were a poor people, with neither gold in the ground nor valuable furs in hand, so the whites had passed them afar. Also, the Yukon, through the thousands of years, had shoaled that portion of the sea with the detritus of Alaska till vessels grounded out of sight of land. So the sodden coast, with its long inside reaches and huge mud-land archipelagoes, was avoided by the ships of men, and the fisherfolk knew not that such things were.

Koogah, the Bone-Scratcher, retreated backward in sudden haste, tripping over his staff and falling to the ground. "Nam-Bok!" he cried, as he scrambled wildly for footing. "Nam-Bok, who was blown off to sea, come back!"

The men and women shrank away, and the children scuttled off between their legs. Only Opee-Kwan was brave, as befitted the head man of the village. He strode forward and gazed long and earnestly at the new-comer.

"It _is_ Nam-Bok," he said at last, and at the conviction in his voice the women wailed apprehensively and drew farther away.

The lips of the stranger moved indecisively, and his brown throat writhed and wrestled with unspoken words.

"La la, it is Nam-Bok," Bask-Wah-Wan croaked, peering up into his face. "Ever did I say Nam-Bok would come back."

"Ay, it is Nam-Bok come back." This time it was Nam-Bok himself who spoke, putting a leg over the side of the bidarka and standing with one foot afloat and one ashore. Again his throat writhed and wrestled as he grappled after forgotten words. And when the words came forth they were strange of sound and a spluttering of the lips accompanied the gutturals. "Greeting, O brothers," he said, "brothers of old time before I went away with the off-shore wind."

He stepped out with both feet on the sand, and Opee-Kwan waved him back.

"Thou art dead, Nam-Bok," he said.

Nam-Bok laughed. "I am fat."

"Dead men are not fat," Opee-Kwan confessed. "Thou hast fared well, but it is strange. No man may mate with the off-shore wind and come back on the heels of the years."

"I have come back," Nam-Bok answered simply.

"Mayhap thou art a shadow, then, a passing shadow of the Nam-Bok that was. Shadows come back."

"I am hungry. Shadows do not eat."

But Opee-Kwan doubted, and brushed his hand across his brow in sore puzzlement. Nam-Bok was likewise puzzled, and as he looked up and down the line found no welcome in the eyes of the fisherfolk. The men and women whispered together. The children stole timidly back among their elders, and bristling dogs fawned up to him and sniffed suspiciously.

"I bore thee, Nam-Bok, and I gave thee suck when thou wast little," Bask-Wah-Wan whimpered, drawing closer; "and shadow though thou be, or no shadow, I will give thee to eat now."

Nam-Bok made to come to her, but a growl of fear and menace warned him back. He said something in a strange tongue which sounded like "Goddam," and added, "No shadow am I, but a man."

"Who may know concerning the things of mystery?" Opee-Kwan demanded, half of himself and half of his tribespeople. "We are, and in a breath we are not. If the man may become shadow, may not the shadow become man? Nam-Bok was, but is not. This we know, but we do not know if this be Nam-Bok or the shadow of Nam-Bok."

Nam-Bok cleared his throat and made answer. "In the old time long ago, thy father's father, Opee-Kwan, went away and came back on the heels of the years. Nor was a place by the fire denied him. It is said ..." He paused significantly, and they hung on his utterance. "It is said," he repeated, driving his point home with deliberation, "that Sipsip, his _klooch_, bore him two sons after he came back."

"But he had no doings with the off-shore wind," Opee-Kwan retorted. "He went away into the heart of the land, and it is in the nature of things that a man may go on and on into the land."

"And likewise the sea. But that is neither here nor there. It is said ... that thy father's father told strange tales of the things he saw."

"Ay, strange tales he told."

"I, too, have strange tales to tell," Nam-Bok stated insidiously. And, as they wavered, "And presents likewise."

He pulled from the bidarka a shawl, marvellous of texture and color, and flung it about his mother's shoulders. The women voiced a collective sigh of admiration, and old Bask-Wah-Wan ruffled the gay material and patted it and crooned in childish joy.

"He has tales to tell," Koogah muttered. "And presents," a woman seconded.

And Opee-Kwan knew that his people were eager, and further, he was aware himself of an itching curiosity concerning those untold tales. "The fishing has been good," he said judiciously, "and we have oil in plenty. So come, Nam-Bok, let us feast."

Two of the men hoisted the bidarka on their shoulders and carried it up to the fire. Nam-Bok walked by the side of Opee-Kwan, and the villagers followed after, save those of the women who lingered a moment to lay caressing fingers on the shawl.

There was little talk while the feast went on, though many and curious were the glances stolen at the son of Bask-Wah-Wan. This embarrassed him--not because he was modest of spirit, however, but for the fact that the stench of the seal-oil had robbed him of his appetite, and that he keenly desired to conceal his feelings on the subject.

"Eat; thou art hungry," Opee-Kwan commanded, and Nam-Bok shut both his eyes and shoved his fist into the big pot of putrid fish.

"La la, be not ashamed. The seal were many this year, and strong men are ever hungry." And Bask-Wah-Wan sopped a particularly offensive chunk of salmon into the oil and passed it fondly and dripping to her son.

In despair, when premonitory symptoms warned him that his stomach was not so strong as of old, he filled his pipe and struck up a smoke. The people fed on noisily and watched. Few of them could boast of intimate acquaintance with the precious weed, though now and again small quantities and abominable qualities were obtained in trade from the Eskimos to the northward. Koogah, sitting next to him, indicated that he was not averse to taking a draw, and between two mouthfuls, with the oil thick on his lips, sucked away at the amber stem. And thereupon Nam-Bok held his stomach with a shaky hand and declined the proffered return. Koogah could keep the pipe, he said, for he had intended so to honor him from the first. And the people licked their fingers and approved of his liberality.

Opee-Kwan rose to his feet "And now, O Nam-Bok, the feast is ended, and we would listen concerning the strange things you have seen."

The fisherfolk applauded with their hands, and gathering about them their work, prepared to listen. The men were busy fashioning spears and carving on ivory, while the women scraped the fat from the hides of the hair seal and made them pliable or sewed muclucs with threads of sinew. Nam-Bok's eyes roved over the scene, but there was not the charm about it that his recollection had warranted him to expect. During the years of his wandering he had looked forward to just this scene, and now that it had come he was disappointed. It was a bare and meagre life, he deemed, and not to be compared to the one to which he had become used. Still, he would open their eyes a bit, and his own eyes sparkled at the thought.

"Brothers," he began, with the smug complacency of a man about to relate the big things he has done, "it was late summer of many summers back, with much such weather as this promises to be, when I went away. You all remember the day, when the gulls flew low, and the wind blew

strong from the land, and I could not hold my bidarka against it. I tied the covering of the bidarka about me so that no water could get in, and all of the night I fought with the storm. And in the morning there was no land,--only the sea,--and the off-shore wind held me close in its arms and bore me along. Three such nights whitened into dawn and showed me no land, and the off-shore wind would not let me go.

"And when the fourth day came, I was as a madman. I could not dip my paddle for want of food; and my head went round and round, what of the thirst that was upon me. But the sea was no longer angry, and the soft south wind was blowing, and as I looked about me I saw a sight that made me think I was indeed mad."

Nam-Bok paused to pick away a sliver of salmon lodged between his teeth, and the men and women, with idle hands and heads craned forward, waited.

"It was a canoe, a big canoe. If all the canoes I have ever seen were made into one canoe, it would not be so large."

There were exclamations of doubt, and Koogah, whose years were many, shook his head.

"If each bidarka were as a grain of sand," Nam-Bok defiantly continued, "and if there were as many bidarkas as there be grains of sand in this beach, still would they not make so big a canoe as this I saw on the morning of the fourth day. It was a very big canoe, and it was called a _schooner_. I saw this thing of wonder, this great schooner, coming after me, and on it I saw men--"

"Hold, O Nam-Bok!" Opee-Kwan broke in. "What manner of men were they?--big men?"

"Nay, mere men like you and me."

"Did the big canoe come fast?"

"Ay."

"The sides were tall, the men short." Opee-Kwan stated the premises with conviction. "And did these men dip with long paddles?"

Nam-Bok grinned. "There were no paddles," he said.

Mouths remained open, and a long silence dropped down. Opee-Kwan borrowed Koogah's pipe for a couple of contemplative sucks. One of the younger women giggled nervously and drew upon herself angry eyes.

"There were no paddles?" Opee-Kwan asked softly, returning the pipe.

"The south wind was behind," Nam-Bok explained.

"But the wind-drift is slow."

"The schooner had wings--thus." He sketched a diagram of masts and sails in the sand, and the men crowded around and studied it. The wind

was blowing briskly, and for more graphic elucidation he seized the corners of his mother's shawl and spread them out till it bellied like a sail. Bask-Wah-Wan scolded and struggled, but was blown down the beach for a score of feet and left breathless and stranded in a heap of driftwood. The men uttered sage grunts of comprehension, but Koogah suddenly tossed back his hoary head.

"Ho! Ho!" he laughed. "A foolish thing, this big canoe! A most foolish thing! The plaything of the wind! Wheresoever the wind goes, it goes too. No man who journeys therein may name the landing beach, for always he goes with the wind, and the wind goes everywhere, but no man knows where."

"It is so," Opee-Kwan supplemented gravely. "With the wind the going is easy, but against the wind a man striveth hard; and for that they had no paddles these men on the big canoe did not strive at all."

"Small need to strive," Nam-Bok cried angrily. "The schooner went likewise against the wind."

"And what said you made the sch--sch--schooner go?" Koogah asked, tripping craftily over the strange word.

"The wind," was the impatient response.

"Then the wind made the sch--sch--schooner go against the wind." Old Koogah dropped an open leer to Opee-Kwan, and, the laughter growing around him, continued: "The wind blows from the south and blows the schooner south. The wind blows against the wind. The wind blows one way and the other at the same time. It is very simple. We understand, Nam-Bok. We clearly understand."

"Thou art a fool!"

"Truth falls from thy lips," Koogah answered meekly. "I was over-long in understanding, and the thing was simple."

But Nam-Bok's face was dark, and he said rapid words which they had never heard before. Bone-scratching and skin-scraping were resumed, but he shut his lips tightly on the tongue that could not be believed.

"This sch--sch--schooner," Koogah imperturbably asked; "it was made of a big tree?"

"It was made of many trees," Nam-Bok snapped shortly. "It was very big."

He lapsed into sullen silence again, and Opee-Kwan nudged Koogah, who shook his head with slow amazement and murmured, "It is very strange."

Nam-bok took the bait. "That is nothing," he said airily; "you should see the _steamer_. As the grain of sand is to the bidarka, as the bidarka is to the schooner, so the schooner is to the steamer. Further, the steamer is made of iron. It is all iron."

"Nay, nay, Nam-Bok," cried the head man; "how can that be? Always iron goes to the bottom. For behold, I received an iron knife in trade from

the head man of the next village, and yesterday the iron knife slipped from my fingers and went down, down, into the sea. To all things there be law. Never was there one thing outside the law. This we know. And, moreover, we know that things of a kind have the one law, and that all iron has the one law. So unsay thy words, Nam-Bok, that we may yet honor thee."

"It is so," Nam-Bok persisted. "The steamer is all iron and does not sink."

"Nay, nay; this cannot be."

"With my own eyes I saw it."

"It is not in the nature of things."

"But tell me, Nam-Bok," Koogah interrupted, for fear the tale would go no farther, "tell me the manner of these men in finding their way across the sea when there is no land by which to steer."

"The sun points out the path."

"But how?"

"At midday the head man of the schooner takes a thing through which his eye looks at the sun, and then he makes the sun climb down out of the sky to the edge of the earth."

"Now this be evil medicine!" cried Opee-Kwan, aghast at the sacrilege. The men held up their hands in horror, and the women moaned. "This be evil medicine. It is not good to misdirect the great sun which drives away the night and gives us the seal, the salmon, and warm weather."

"What if it be evil medicine?" Nam-Bok demanded truculently. "I, too, have looked through the thing at the sun and made the sun climb down out of the sky."

Those who were nearest drew away from him hurriedly, and a woman covered the face of a child at her breast so that his eye might not fall upon it.

"But on the morning of the fourth day, O Nam-Bok," Koogah suggested; "on the morning of the fourth day when the sch--sch--schooner came after thee?"

"I had little strength left in me and could not run away. So I was taken on board and water was poured down my throat and good food given me. Twice, my brothers, you have seen a white man. These men were all white and as many as have I fingers and toes. And when I saw they were full of kindness, I took heart, and I resolved to bring away with me report of all that I saw. And they taught me the work they did, and gave me good food and a place to sleep.

"And day after day we went over the sea, and each day the head man drew the sun down out of the sky and made it tell where we were. And when the waves were kind, we hunted the fur seal and I marvelled much, for always did they fling the meat and the fat away and save only the

skin."

Opee-Kwan's mouth was twitching violently, and he was about to make denunciation of such waste when Koogah kicked him to be still.

"After a weary time, when the sun was gone and the bite of the frost come into the air, the head man pointed the nose of the schooner south. South and east we travelled for days upon days, with never the land in sight, and we were near to the village from which hailed the men--"

"How did they know they were near?" Opee-Kwan, unable to contain himself longer, demanded. "There was no land to see."

Nam-Bok glowered on him wrathfully. "Did I not say the head man brought the sun down out of the sky?"

Koogah interposed, and Nam-Bok went on.

"As I say, when we were near to that village a great storm blew up, and in the night we were helpless and knew not where we were--"

"Thou hast just said the head man knew--"

"Oh, peace, Opee-Kwan! Thou art a fool and cannot understand. As I say, we were helpless in the night, when I heard, above the roar of the storm, the sound of the sea on the beach. And next we struck with a mighty crash and I was in the water, swimming. It was a rock-bound coast, with one patch of beach in many miles, and the law was that I should dig my hands into the sand and draw myself clear of the surf. The other men must have pounded against the rocks, for none of them came ashore but the head man, and him I knew only by the ring on his finger.

"When day came, there being nothing of the schooner, I turned my face to the land and journeyed into it that I might get food and look upon the faces of the people. And when I came to a house I was taken in and given to eat, for I had learned their speech, and the white men are ever kindly. And it was a house bigger than all the houses built by us and our fathers before us."

"It was a mighty house," Koogah said, masking his unbelief with wonder.

"And many trees went into the making of such a house," Opee-Kwan added, taking the cue.

"That is nothing." Nam-Bok shrugged his shoulders in belittling fashion. "As our houses are to that house, so that house was to the houses I was yet to see."

"And they are not big men?"

"Nay; mere men like you and me," Nam-Bok answered. "I had cut a stick that I might walk in comfort, and remembering that I was to bring report to you, my brothers, I cut a notch in the stick for each person who lived in that house. And I stayed there many days, and worked, for

which they gave me _money_--a thing of which you know nothing, but which is very good.

"And one day I departed from that place to go farther into the land. And as I walked I met many people, and I cut smaller notches in the stick, that there might be room for all. Then I came upon a strange thing. On the ground before me was a bar of iron, as big in thickness as my arm, and a long step away was another bar of iron--"

"Then wert thou a rich man," Opee-Kwan asserted; "for iron be worth more than anything else in the world. It would have made many knives."

"Nay, it was not mine."

"It was a find, and a find be lawful."

"Not so; the white men had placed it there And further, these bars were so long that no man could carry them away--so long that as far as I could see there was no end to them."

"Nam-Bok, that is very much iron," Opee-Kwan cautioned.

"Ay, it was hard to believe with my own eyes upon it; but I could not gainsay my eyes. And as I looked I heard...." He turned abruptly upon the head man. "Opee-Kwan, thou hast heard the sea-lion bellow in his anger. Make it plain in thy mind of as many sea-lions as there be waves to the sea, and make it plain that all these sea-lions be made into one sea-lion, and as that one sea-lion would bellow so bellowed the thing I heard."

The fisherfolk cried aloud in astonishment, and Opee-Kwan's jaw lowered and remained lowered.

"And in the distance I saw a monster like unto a thousand whales. It was one-eyed, and vomited smoke, and it snorted with exceeding loudness. I was afraid and ran with shaking legs along the path between the bars. But it came with the speed of the wind, this monster, and I leaped the iron bars with its breath hot on my face...."

Opee-Kwan gained control of his jaw again. "And--and then, O Nam-Bok?"

"Then it came by on the bars, and harmed me not; and when my legs could hold me up again it was gone from sight. And it is a very common thing in that country. Even the women and children are not afraid. Men make them to do work, these monsters."

"As we make our dogs do work?" Koogah asked, with sceptic twinkle in his eye.

"Ay, as we make our dogs do work."

"And how do they breed these--these things?" Opee-Kwan questioned.

"They breed not at all. Men fashion them cunningly of iron, and feed them with stone, and give them water to drink. The stone becomes fire, and the water becomes steam, and the steam of the water is the breath

of their nostrils, and--"

"There, there, O Nam-Bok," Opee-Kwan interrupted. "Tell us of other wonders. We grow tired of this which we may not understand."

"You do not understand?" Nam-Bok asked despairingly.

"Nay, we do not understand," the men and women wailed back. "We cannot understand."

Nam-Bok thought of a combined harvester, and of the machines wherein visions of living men were to be seen, and of the machines from which came the voices of men, and he knew his people could never understand.

"Dare I say I rode this iron monster through the land?" he asked bitterly.

Opee-Kwan threw up his hands, palms outward, in open incredulity. "Say on; say anything. We listen."

"Then did I ride the iron monster, for which I gave money--"

"Thou saidst it was fed with stone."

"And likewise, thou fool, I said money was a thing of which you know nothing. As I say, I rode the monster through the land, and through many villages, until I came to a big village on a salt arm of the sea. And the houses shoved their roofs among the stars in the sky, and the clouds drifted by them, and everywhere was much smoke. And the roar of that village was like the roar of the sea in storm, and the people were so many that I flung away my stick and no longer remembered the notches upon it."

"Hadst thou made small notches," Koogah reproved, "thou mightst have brought report."

Nam-Bok whirled upon him in anger. "Had I made small notches! Listen, Koogah, thou scratcher of bone! If I had made small notches, neither the stick, nor twenty sticks, could have borne them--nay, not all the driftwood of all the beaches between this village and the next. And if all of you, the women and children as well, were twenty times as many, and if you had twenty hands each, and in each hand a stick and a knife, still the notches could not be cut for the people I saw, so many were they and so fast did they come and go."

"There cannot be so many people in all the world," Opee-Kwan objected, for he was stunned and his mind could not grasp such magnitude of numbers.

"What dost thou know of all the world and how large it is?" Nam-Bok demanded.

"But there cannot be so many people in one place."

"Who art thou to say what can be and what cannot be?"

"It stands to reason there cannot be so many people in one place."

Their canoes would clutter the sea till there was no room. And they could empty the sea each day of its fish, and they would not all be fed."

"So it would seem," Nam-Bok made final answer; "yet it was so. With my own eyes I saw, and flung my stick away." He yawned heavily and rose to his feet. "I have paddled far. The day has been long, and I am tired. Now I will sleep, and to-morrow we will have further talk upon the things I have seen."

Bask-Wah-Wan, hobbling fearfully in advance, proud indeed, yet awed by her wonderful son, led him to her igloo and stowed him away among the greasy, ill-smelling furs. But the men lingered by the fire, and a council was held wherein was there much whispering and low-voiced discussion.

An hour passed, and a second, and Nam-Bok slept, and the talk went on. The evening sun dipped toward the northwest, and at eleven at night was nearly due north. Then it was that the head man and the bone-scratcher separated themselves from the council and aroused Nam-Bok. He blinked up into their faces and turned on his side to sleep again. Opee-Kwan gripped him by the arm and kindly but firmly shook his senses back into him.

"Come, Nam-Bok, arise!" he commanded. "It be time."

"Another feast?" Nam-Bok cried. "Nay, I am not hungry. Go on with the eating and let me sleep."

"Time to be gone!" Koogah thundered.

But Opee-Kwan spoke more softly. "Thou wast bidarka-mate with me when we were boys," he said. "Together we first chased the seal and drew the salmon from the traps. And thou didst drag me back to life, Nam-Bok, when the sea closed over me and I was sucked down to the black rocks. Together we hungered and bore the chill of the frost, and together we crawled beneath the one fur and lay close to each other. And because of these things, and the kindness in which I stood to thee, it grieves me sore that thou shouldst return such a remarkable liar. We cannot understand, and our heads be dizzy with the things thou hast spoken. It is not good, and there has been much talk in the council. Wherefore we send thee away, that our heads may remain clear and strong and be not troubled by the unaccountable things."

"These things thou speakest of be shadows," Koogah took up the strain. "From the shadow-world thou hast brought them, and to the shadow-world thou must return them. Thy bidarka be ready, and the tribespeople wait. They may not sleep until thou art gone."

Nam-Bok was perplexed, but hearkened to the voice of the head man.

"If thou art Nam-Bok," Opee-Kwan was saying, "thou art a fearful and most wonderful liar; if thou art the shadow of Nam-Bok, then thou speakest of shadows, concerning which it is not good that living men have knowledge. This great village thou hast spoken of we deem the village of shadows. Therein flutter the souls of the dead; for the dead be many and the living few. The dead do not come back. Never have

the dead come back--save thou with thy wonder-*tales*. It is not meet that the dead come back, and should we permit it, great trouble may be our portion."

Nam-Bok knew his people well and was aware that the voice of the council was supreme. So he allowed himself to be led down to the water's edge, where he was put aboard his *bidarka* and a paddle thrust into his hand. A stray wild-fowl honked somewhere to seaward, and the surf broke limply and hollowly on the sand. A dim twilight brooded over land and water, and in the north the sun smouldered, vague and troubled, and draped about with blood-red mists. The gulls were flying low. The off-shore wind blew keen and chill, and the black-massed clouds behind it gave promise of bitter weather.

"Out of the sea thou earnest," Opee-Kwan chanted oracularly, "and back into the sea thou goest. Thus is balance achieved and all things brought to law."

Bask-Wah-Wan limped to the froth-mark and cried, "I bless thee, Nam-Bok, for that thou remembered me."

But Koogah, shoving Nam-Bok clear of the beach, tore the shawl from her shoulders and flung it into the *bidarka*.

"It is cold in the long nights," she wailed; "and the frost is prone to nip old bones."

"The thing is a shadow," the bone-scratcher answered, "and shadows cannot keep thee warm."

Nam-Bok stood up that his voice might carry. "O Bask-Wah-Wan, mother that bore me!" he called. "Listen to the words of Nam-Bok, thy son. There be room in his *bidarka* for two, and he would that thou camest with him. For his journey is to where there are fish and oil in plenty. There the frost comes not, and life is easy, and the things of iron do the work of men. Wilt thou come, O Bask-Wah-Wan?"

She debated a moment, while the *bidarka* drifted swiftly from her, then raised her voice to a quavering treble. "I am old, Nam-Bok, and soon I shall pass down among the shadows. But I have no wish to go before my time. I am old, Nam-Bok, and I am afraid."

A shaft of light shot across the dim-lit sea and wrapped boat and man in a splendor of red and gold. Then a hush fell upon the fisherfolk, and only was heard the moan of the off-shore wind and the cries of the gulls flying low in the air.

MY FAIR NEIGHBOUR

Project Gutenberg's *Mashi and Other Stories*, by Rabindranath Tagore

My feelings towards the young widow who lived in the next house to mine were feelings of worship; at least, that is what I told to my friends and myself. Even my nearest intimate, Nabin, knew nothing of the real state of my mind. And I had a sort of pride that I could keep my passion pure by thus concealing it in the inmost recesses of my heart. She was like a dew-drenched _sephali_-blossom, untimely fallen to earth. Too radiant and holy for the flower-decked marriage-bed, she had been dedicated to Heaven.

But passion is like the mountain stream, and refuses to be enclosed in the place of its birth; it must seek an outlet. That is why I tried to give expression to my emotions in poems; but my unwilling pen refused to desecrate the object of my worship.

It happened curiously that just at this time my friend Nabin was afflicted with a madness of verse. It came upon him like an earthquake. It was the poor fellow's first attack, and he was equally unprepared for rhyme and rhythm. Nevertheless he could not refrain, for he succumbed to the fascination, as a widower to his second wife.

So Nabin sought help from me. The subject of his poems was the old, old one, which is ever new: his poems were all addressed to the beloved one. I slapped his back in jest, and asked him: 'Well, old chap, who is she?'

Nabin laughed, as he replied: 'That I have not yet discovered!'

I confess that I found considerable comfort in bringing help to my friend. Like a hen brooding on a duck's egg, I lavished all the warmth of my pent-up passion on Nabin's effusions. So vigorously did I revise and improve his crude productions, that the larger part of each poem became my own.

Then Nabin would say in surprise: 'That is just what I wanted to say, but could not. How on earth do you manage to get hold of all these fine sentiments?'

Poet-like, I would reply: 'They come from my imagination; for, as you know, truth is silent, and it is imagination only which waxes eloquent. Reality represses the flow of feeling like a rock; imagination cuts out a path for itself.'

And the poor puzzled Nabin would say: 'Y-e-s, I see, yes, of course'; and then after some thought would murmur again: 'Yes, yes, you are right!'

As I have already said, in my own love there was a feeling of reverential delicacy which prevented me from putting it into words. But with Nabin as a screen, there was nothing to hinder the flow of my pen; and a true warmth of feeling gushed out into these vicarious poems.

Nabin in his lucid moments would say: 'But these are yours! Let me publish them over your name.'

'Nonsense!' I would reply. 'They are yours, my dear fellow; I have only added a touch or two here and there.'

And Nabin gradually came to believe it.

I will not deny that, with a feeling akin to that of the astronomer gazing into the starry heavens, I did sometimes turn my eyes towards the window of the house next door. It is also true that now and again my furtive glances would be rewarded with a vision. And the least glimpse of the pure light of that countenance would at once still and clarify all that was turbulent and unworthy in my emotions.

But one day I was startled. Could I believe my eyes? It was a hot summer afternoon. One of the fierce and fitful nor'-westers was threatening. Black clouds were massed in the north-west corner of the sky; and against the strange and fearful light of that background my fair neighbour stood, gazing out into empty space. And what a world of forlorn longing did I discover in the far-away look of those lustrous black eyes! Was there then, perchance, still some living volcano within the serene radiance of that moon of mine? Alas! that look of limitless yearning, which was winging its way through the clouds like an eager bird, surely sought--not heaven--but the nest of some human heart!

At the sight of the unutterable passion of that look I could hardly contain myself. I was no longer satisfied with correcting crude poems. My whole being longed to express itself in some worthy action. At last I thought I would devote myself to making widow-remarriage popular in my country. I was prepared not only to speak and write on the subject, but also to spend money on its cause.

Nabin began to argue with me. 'Permanent widowhood,' said he, 'has in it a sense of immense purity and peace; a calm beauty like that of the silent places of the dead shimmering in the wan light of the eleventh moon.[47] Would not the mere possibility of remarriage destroy its divine beauty?'

[47] The eleventh day of the moon is a day of fasting and penance.

Now this sort of sentimentality always makes me furious. In time of famine, if a well-fed man speaks scornfully of food, and advises a starving man at point of death to glut his hunger on the fragrance of flowers and the song of birds, what are we to think of him? I said with some heat: 'Look here, Nabin, to the artist a ruin may be a beautiful object; but houses are built not only for the contemplation of artists, but that people may live therein; so they have to be kept in repair in spite of artistic susceptibilities. It is all very well for you to idealise widowhood from your safe distance, but you should remember that within widowhood there is a sensitive human heart, throbbing with pain and desire.'

I had an impression that the conversion of Nabin would be a difficult matter, so perhaps I was more impassioned than I need have been. I was somewhat surprised to find at the conclusion of my little speech that Nabin after a single thoughtful sigh completely agreed with me. The even more convincing peroration which I felt I might have delivered was not needed!

After about a week Nabin came to me, and said that if I would help him he was prepared to lead the way by marrying a widow himself.

I was overjoyed. I embraced him effusively, and promised him any money that might be required for the purpose. Then Nabin told me his story.

I learned that Nabin's loved one was not an imaginary being. It appeared that Nabin, too, had for some time adored a widow from a distance, but had not spoken of his feelings to any living soul. Then the magazines in which Nabin's poems, or rather _my_ poems, used to appear had reached the fair one's hands; and the poems had not been ineffective.

Not that Nabin had deliberately intended, as he was careful to explain, to conduct love-making in that way. In fact, said he, he had no idea that the widow knew how to read. He used to post the magazine, without disclosing the sender's name, addressed to the widow's brother. It was only a sort of fancy of his, a concession to his hopeless passion. It was flinging garlands before a deity; it is not the worshipper's affair whether the god knows or not, whether he accepts or ignores the offering.

And Nabin particularly wanted me to understand that he had no definite end in view when on diverse pretexts he sought and made the acquaintance of the widow's brother. Any near relation of the loved one needs must have a special interest for the lover.

Then followed a long story about how an illness of the brother at last brought them together. The presence of the poet himself naturally led to much discussion of the poems; nor was the discussion necessarily restricted to the subject out of which it arose.

After his recent defeat in argument at my hands, Nabin had mustered up courage to propose marriage to the widow. At first he could not gain her consent. But when he had made full use of my eloquent words, supplemented by a tear or two of his own, the fair one capitulated unconditionally. Some money was now wanted by her guardian to make arrangements.

'Take it at once,' said I.

'But,' Nabin went on, 'you know it will be some months before I can appease my father sufficiently for him to continue my allowance. How are we to live in the meantime?' I wrote out the necessary cheque without a word, and then I said: 'Now tell me who she is. You need not look on me as a possible rival, for I swear I will not write poems to her; and even if I do I will not send them to her brother, but to you!'

'Don't be absurd,' said Nabin; 'I have not kept back her name because I feared your rivalry! The fact is, she was very much perturbed at taking this unusual step, and had asked me not to talk about the matter to my friends. But it no longer matters, now that everything has been satisfactorily settled. She lives at No. 19, the house next to yours.'

If my heart had been an iron boiler it would have burst. 'So she has no objection to remarriage?' I simply asked.

'Not at the present moment,' replied Nabin with a smile.

'And was it the poems alone which wrought the magic change?'

'Well, my poems were not so bad, you know,' said Nabin, 'were they?'

I swore mentally.

But at whom was I to swear? At him? At myself? At Providence? All the same, I swore.

TRANSFORMATION INTO A NIGHTINGALE AND A CUCKOO.

The Project Gutenberg eBook, *Sixty Folk-Tales from Exclusively Slavonic Sources*, by Various, Translated by Albert Henry Wratislaw

A damsel fell in love with a snake, and was also beloved by him. He took her to wife. His dwelling was of pure glass, all crystal. This dwelling was situated underground, in a kind of mound, or something of the sort. Well, it is said that her old mother at first grieved over her. How could she help doing so? Well, when the time came, the snake's wife became the mother of twins, a boy and a girl; they looked, as they lay by their mother, as if they were made of wax. And she was herself as beautiful as a flower. Well, God having given her children, she said: 'Now, then, since they have been born as human beings, let us christen them among human beings.' She took her seat in a golden carriage, laid the children on her knees, and drove off to the village to the pope.[11] The carriage had not got into the open country, when sadness was brought to the mother. The old woman had made an outcry in the whole village, seized a sickle, and rushed into the country. She saw she had manifest death before her, when she called to her children, and went on to say: 'Fly, my children, as birds about the world: you, my little son, as a nightingale, and you, my daughter, as a cuckoo.' Out flew a nightingale from the carriage by the right-hand, and a cuckoo by the left-hand window. What became of the carriage and horses and all nobody knows. Nor did their mistress remain, only a dead nettle sprang up by the roadside.

[11] The orthodox Greek priests are always designated 'popes.'

A NIGHT AT AN INN^[45]

A PLAY IN ONE ACT

By LORD DUNSANY

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Edward John Moreton Drax Plunkett, eighteenth baron Dunsany, was born in 1878, a lord of the British Empire, heir to an ancient barony, created by Henry VI in the middle of the fifteenth century. He went from Eton to Sandhurst, the English military college, held a lieutenancy in a famous regiment, the Coldstream Guards, saw active service in the South African War and served in the Great War as an officer in the Royal Inniskilling Fusiliers. He turned aside from his career as a soldier in 1906 to stand for West Wiltshire as the Conservative candidate, but he was defeated. He writes enthusiastically always of his interest in sport; he has gone to the ends of the earth to shoot big game. His first book, _The Gods of Pegana_, was published in 1905. He has since written sketches, fantastic tales, and plays,[46] and latterly introductions to the poems of Francis Ledwidge, the Irish peasant poet, who fell in battle in 1917. Dunsany's early plays were put on at the Abbey Theatre where Yeats produced _The Glittering Gate_ in 1909.

[Footnote 46: For bibliography see E. A. Boyd, _The Contemporary Drama of Ireland_, Boston, 1917.]

The initial American productions were also made in Little Theatres, under the auspices of the Stage Society of Philadelphia and at The Neighborhood Playhouse in New York, where the first performance on any stage of _A Night at an Inn_ was given on April 22, 1916. It was an immediate success and aroused great general interest in Dunsany's other plays. It was remarked at the time that its scene on an English moor was far from "his own Oriental Never Never Land," and that it recalled in its substance _The Moonstone_ by Wilkie Collins and _The Mystery of Cloomber_ by A. Conan Doyle. Dunsany, unlike the other playwrights associated with the Irish National Theatre, has borrowed the glamour of the Orient rather than that of Celtic lore, to heighten his dramatic effects. There is, in fact, much that is Biblical in his mood and in his diction.

When, at a later date, Lord Dunsany saw the production of _A Night at an Inn_ at The Neighborhood Playhouse, the effect of the play "exceeded his own expectations, and he was surprised to note the thrill which it communicated to his audience. 'It's a very simple thing,' he said,--'merely a story of some sailors who have stolen something and know that they are followed. Possibly it is effective because nearly everybody, at some time or other, has done something he was sorry for, has been afraid of retribution, and has felt the hot

breath of a pursuing vengeance on the back of his neck.... _A Night at an Inn_ was written between tea and dinner in a single sitting. That was very easy." [47]

[Footnote 47: Clayton Hamilton, _Seen on the Stage_, New York, 1920, p. 238; p. 239.]

A Night at an Inn is one of Dunsany's contributions to the revival of romance in our generation. In an article published ten years ago, called _Romance and the Modern Stage_, he wrote: "Romance is so inseparable from life that all we need, to obtain romantic drama, is for the dramatist to find any age or any country where life is not too thickly veiled and cloaked with puzzles and conventions, in fact to find a people that is not in the agonies of self-consciousness. For myself, I think it is simpler to imagine such a people, as it saves the trouble of reading to find a romantic age, or the trouble of making a journey to lands where there is no press.... The kind of drama that we most need to-day seems to me to be the kind that will build new worlds for the fancy; for the spirit, as much as the body, needs sometimes a change of scene."

A NIGHT AT AN INN

CHARACTERS

A. E. SCOTT-FORTESQUE (The Toff), _a dilapidated gentleman._
WILLIAM JONES (Bill) }
ALBERT THOMAS } _merchant sailors._
JACOB SMITH (Sniggers) }
First Priest of Klesh.
Second Priest of Klesh.
Third Priest of Klesh.
Klesh.

The curtain rises on a room in an inn. SNIGGERS and BILL are talking, THE TOFF is reading a paper. ALBERT sits a little apart.

SNIGGERS. What's his idea, I wonder?

BILL. I don't know.

SNIGGERS. And how much longer will he keep us here?

BILL. We've been here three days.

SNIGGERS. And 'aven't seen a soul.

BILL. And a pretty penny it cost us when he rented the pub.

SNIGGERS. 'Ow long did 'e rent the pub for?

BILL. You never know with him.

SNIGGERS. It's lonely enough.

BILL. 'Ow long did you rent the pub for, Toffy? [_THE TOFF continues to read a sporting paper; he takes no notice of what is said._]

SNIGGERS. 'E's _such_ a toff.

BILL. Yet 'e's clever, no mistake.

SNIGGERS. Those clever ones are the beggars to make a muddle. Their plans are clever enough, but they don't work, and then they make a mess of things much worse than you or me.

BILL. Ah!

SNIGGERS. I don't like this place.

BILL. Why not?

SNIGGERS. I don't like the looks of it.

BILL. He's keeping us here because here those niggers can't find us. The three heathen priests what was looking for us so. But we want to go and sell our ruby soon.

ALBERT. There's no sense in it.

BILL. Why not, Albert?

ALBERT. Because I gave those black devils the slip in Hull.

BILL. You give 'em the slip, Albert?

ALBERT. The slip, all three of them. The fellows with the gold spots on their foreheads. I had the ruby then and I give them the slip in Hull.

BILL. How did you do it, Albert?

ALBERT. I had the ruby and they were following me....

BILL. Who told them you had the ruby? You didn't show it.

ALBERT. No.... But they kind of know.

SNIGGERS. They kind of know, Albert?

ALBERT. Yes, they know if you've got it. Well, they sort of mouched after me, and I tells a policeman and he says, O, they were only three poor niggers and they wouldn't hurt me. Ugh! When I thought of what they did in Malta to poor old Jim.

BILL. Yes, and to George in Bombay before we started.

SNIGGERS. Ugh!

BILL. Why didn't you give 'em in charge?

ALBERT. What about the ruby, Bill?

BILL. Ah!

ALBERT. Well, I did better than that. I walks up and down through Hull. I walks slow enough. And then I turns a corner and I runs. I never sees a corner but I turns it. But sometimes I let a corner pass just to fool them. I twists about like a hare. Then I sits down and waits. No priests.

SNIGGERS. What?

ALBERT. No heathen black devils with gold spots on their face. I give 'em the slip.

BILL. Well done, Albert!

SNIGGERS [_after a sigh of content_]. Why didn't you tell us?

ALBERT. 'Cause 'e won't let you speak. 'E's got 'is plans and 'e thinks we're silly folk. Things must be done 'is way. And all the time I've give 'em the slip. Might 'ave 'ad one o' them crooked knives in him before now but for me who give 'em the slip in Hull.

BILL. Well done, Albert! Do you hear that, Toffy? Albert has give 'em the slip.

THE TOFF. Yes, I hear.

SNIGGERS. Well, what do you say to that?

THE TOFF. O.... Well done, Albert!

ALBERT. And what a' you going to do?

THE TOFF. Going to wait.

ALBERT. Don't seem to know what 'e's waiting for.

SNIGGERS. It's a nasty place.

ALBERT. It's getting silly, Bill. Our money's gone and we want to sell the ruby. Let's get on to a town.

BILL. But 'e won't come.

ALBERT. Then we'll leave him.

SNIGGERS. We'll be all right if we keep away from Hull.

ALBERT. We'll go to London.

BILL. But 'e must 'ave 'is share.

SNIGGERS. All right. Only let's go. [_To THE TOFF._] We're going, do you hear? Give us the ruby.

THE TOFF. Certainly. [_He gives them a ruby from his waistcoat pocket; it is the size of a small hen's egg. He goes on reading his paper._]

ALBERT. Come on, Sniggers. [_Exeunt ALBERT and SNIGGERS._]

BILL. Good-by, old man. We'll give you your fair share, but there's nothing to do here--no girls, no halls, and we must sell the ruby.

THE TOFF. I'm not a fool, Bill.

BILL. No, no, of course not. Of course you ain't, and you've helped us a lot. Good-by. You'll say good-by?

THE TOFF. Oh, yes. Good-by. [_Still reads his paper. Exit BILL. THE TOFF puts a revolver on the table beside him and goes on with his papers. After a moment the three men come rushing in again, frightened._]

SNIGGERS [_out of breath_]. We've come back, Toffy.

THE TOFF. So you have.

ALBERT. Toffy.... How did they get here?

THE TOFF. They walked, of course.

ALBERT. But it's eighty miles.

SNIGGERS. Did you know they were here, Toffy?

THE TOFF. Expected them about now.

ALBERT. Eighty miles!

BILL. Toffy, old man ... what are we to do?

THE TOFF. Ask Albert.

BILL. If they can do things like this, there's no one can save us but you, Toffy.... I always knew you were a clever one. We won't be fools any more. We'll obey you, Toffy.

THE TOFF. You're brave enough and strong enough. There isn't many that would steal a ruby eye out of an idol's head, and such an idol as that was to look at, and on such a night. You're brave enough, Bill. But you're all three of you fools. Jim would have none of my plans, and where's Jim? And George. What did they do to him?

SNIGGERS. Don't, Toffy!

THE TOFF. Well, then, your strength is no use to you. You want cleverness; or they'll have you the way they had George and Jim.

ALL. Ugh!

THE TOFF. Those black priests would follow you round the world in circles. Year after year, till they got the idol's eye. And if we died with it, they'd follow our grandchildren. That fool thinks he can escape from men like that by running round three streets in the town of Hull.

ALBERT. God's truth, _you_ 'aven't escaped them, because they're _'ere_.

THE TOFF. So I supposed.

ALBERT. You _supposed_!

THE TOFF. Yes, I believe there's no announcement in the Society papers. But I took this country seat especially to receive them. There's plenty of room if you dig, it is pleasantly situated, and, what is more important, it is in a very quiet neighborhood. So I am at home to them this afternoon.

BILL. Well, _you're_ a deep one.

THE TOFF. And remember, you've only my wits between you and death, and don't put your futile plans against those of an educated gentleman.

ALBERT. If you're a gentleman, why don't you go about among gentlemen instead of the likes of us?

THE TOFF. Because I was too clever for them as I am too clever for you.

ALBERT. Too clever for them?

THE TOFF. I never lost a game of cards in my life.

BILL. You never lost a game?

THE TOFF. Not when there was money in it.

BILL. Well, well!

THE TOFF. Have a game of poker?

ALL. No, thanks.

THE TOFF. Then do as you're told.

BILL. All right, Toffy.

SNIGGERS. I saw something just then. Hadn't we better draw the curtains?

THE TOFF. No.

SNIGGERS. What?

THE TOFF. Don't draw the curtains.

SNIGGERS. O, all right.

BILL. But, Toffy, they can see us. One doesn't let the enemy do that.
I don't see why....

THE TOFF. No, of course you don't.

BILL. O, all right, Toffy. [_All begin to pull out revolvers._]

THE TOFF [_putting his own away_]. No revolvers, please.

ALBERT. Why not?

THE TOFF. Because I don't want any noise at my party. We might get guests that hadn't been invited. _Knives_ are a different matter.
[_All draw knives. THE TOFF signs to them not to draw them yet. TOFFY has already taken back his ruby._]

BILL. I think they're coming, Toffy.

THE TOFF. Not yet.

ALBERT. When will they come?

THE TOFF. When I am quite ready to receive them. Not before.

SNIGGERS. I should like to get this over.

THE TOFF. Should you? Then we'll have them now.

SNIGGERS. Now?

THE TOFF. Yes. Listen to me. You shall do as you see me do. You will all pretend to go out. I'll show you how. I've got the ruby. When they see me alone they will come for their idol's eye.

BILL. How can they tell like this which of us has it?

THE TOFF. I confess I don't know, but they seem to.

SNIGGERS. What will you do when they come in?

THE TOFF. I shall do nothing.

SNIGGERS. What?

THE TOFF. They will creep up behind me. Then, my friends, Sniggers and Bill and Albert, who gave them the slip, will do what they can.

BILL. All right, Toffy. Trust us.

THE TOFF. If you're a little slow, you will see enacted the cheerful spectacle that accompanied the demise of Jim.

SNIGGERS. Don't, Toffy. We'll be there, all right.

THE TOFF. Very well. Now watch me. [_He goes past the windows to the inner door R. He opens it inwards, then under cover of the open door, he slips down on his knee and closes it, remaining on the inside, appearing to have gone out. He signs to the others, who understand. Then he appears to re-enter in the same manner._]

THE TOFF. Now, I shall sit with my back to the door. You go out one by one, so far as our friends can make out. Crouch very low to be on the safe side. They mustn't see you through the window. [_BILL makes his sham exit._]

THE TOFF. Remember, no revolvers. The police are, I believe, proverbially inquisitive. [_The other two follow BILL. All three are now crouching inside the door R. THE TOFF puts the ruby beside him on the table. He lights a cigarette. The door at the back opens so slowly that you can hardly say at what moment it began. THE TOFF picks up his paper. A native of India wriggles along the floor ever so slowly, seeking cover from chairs. He moves L. where THE TOFF is. The three sailors are R. SNIGGERS and ALBERT lean forward. BILL's arm keeps them back. An arm-chair had better conceal them from the Indian. The black Priest nears THE TOFF. BILL watches to see if any more are coming. Then he leaps forward alone--he has taken his boots off--and knifes the Priest. The Priest tries to shout but BILL's left hand is over his mouth. THE TOFF continues to read his sporting paper. He never looks around._]

BILL [_sotto voce_]. There's only one, Toffy. What shall we do?

THE TOFF [_without turning his head_]. Only one?

BILL. Yes.

THE TOFF. Wait a moment. Let me think. [_Still apparently absorbed in his paper._] Ah, yes. You go back, Bill. We must attract another guest.... Now, are you ready?

BILL. Yes.

THE TOFF. All right. You shall now see my demise at my Yorkshire residence. You must receive guests for me. [_He leaps up in full view of the window, flings up both arms and falls to the floor near the dead Priest._] Now, be ready. [_His eyes close. There is a long pause. Again the door opens, very, very slowly. Another priest creeps in. He has three golden spots upon his forehead. He looks round, then he creeps up to his companion and turns him over and looks inside of his clenched hands. Then he looks at the recumbent TOFF. Then he creeps toward him. BILL slips after him and knifes him like the other with his left hand over his mouth._]

BILL [_sotto voce_]. We've only got two, Toffy.

THE TOFF. Still another.

BILL. What'll we do?

THE TOFF [_sitting up_]. Hum.

BILL. This is the best way, much.

THE TOFF. Out of the question. Never play the same game twice.

BILL. Why not, Toffy?

THE TOFF. Doesn't work if you do.

BILL. Well?

THE TOFF. I have it, Albert. You will now walk into the room. I showed you how to do it.

ALBERT. Yes.

THE TOFF. Just run over here and have a fight at this window with these two men.

ALBERT. But they're ...

THE TOFF. Yes, they're dead, my perspicuous Albert. But Bill and I are going to resuscitate them.... Come on. [_BILL picks up a body under the arms._]

THE TOFF. That's right, Bill. [_Does the same._] Come and help us, Sniggers.... [_SNIGGERS comes._] Keep low, keep low. Wave their arms about, Sniggers. Don't show yourself. Now, Albert, over you go. Our Albert is slain. Back you get, Bill. Back, Sniggers. Still, Albert. Mustn't move when he comes. Not a muscle. [_A face appears at the window and stays for some time. Then the door opens and, looking craftily round, the third Priest enters. He looks at his companions' bodies and turns round. He suspects something. He takes up one of the knives and with a knife in each hand he puts his back to the wall. He looks to the left and right._]

THE TOFF. Come on, Bill. [_The Priest rushes to the door. THE TOFF knifes the last Priest from behind._]

THE TOFF. A good day's work, my friends.

BILL. Well done, Toffy. Oh, you are a deep one!

ALBERT. A deep one if ever there was one.

SNIGGERS. There ain't any more, Bill, are there?

THE TOFF. No more in the world, my friend.

BILL. Aye, that's all there are. There were only three in the temple. Three priests and their beastly idol.

ALBERT. What is it worth, Toffy? Is it worth a thousand pounds?

THE TOFF. It's worth all they've got in the shop. Worth just whatever we like to ask for it.

ALBERT. Then we're millionaires now.

THE TOFF. Yes, and, what is more important, we no longer have any heirs.

BILL. We'll have to sell it now.

ALBERT. That won't be easy. It's a pity it isn't small and we had half a dozen. Hadn't the idol any other on him?

BILL. No, he was green jade all over and only had this one eye. He had it in the middle of his forehead and was a long sight uglier than anything else in the world.

SNIGGERS. I'm sure we ought all to be very grateful to Toffy.

BILL. And, indeed, we ought.

ALBERT. If it hadn't been for him....

BILL. Yes, if it hadn't been for old Toffy....

SNIGGERS. He's a deep one.

THE TOFF. Well, you see I just have a knack of foreseeing things.

SNIGGERS. I should think you did.

BILL. Why, I don't suppose anything happens that our Toff doesn't foresee. Does it, Toffy?

THE TOFF. Well, I don't think it does, Bill. I don't think it often does.

BILL. Life is no more than just a game of cards to our old Toff.

THE TOFF. Well, we've taken these fellows' trick.

SNIGGERS [_going to window_]. It wouldn't do for anyone to see them.

THE TOFF. Oh, nobody will come this way. We're all alone on a moor.

BILL. Where will we put them?

THE TOFF. Bury them in the cellar, but there's no hurry.

BILL. And what then, Toffy?

THE TOFF. Why, then we'll go to London and upset the ruby business. We have really come through this job very nicely.

BILL. I think the first thing that we ought to do is to give a little supper to old Toffy. We'll bury these fellows to-night.

ALBERT. Yes, let's.

SNIGGERS. The very thing!

BILL. And we'll all drink his health.

ALBERT. Good old Toffy!

SNIGGERS. He ought to have been a general or a premier. [_They get bottles from cupboard, etc._]

THE TOFF. Well, we've earned our bit of a supper. [_They sit down._]

BILL [_glass in hand_]. Here's to old Toffy, who guessed everything!

ALBERT and SNIGGERS. Good old Toffy!

BILL. Toffy, who saved our lives and made our fortunes.

ALBERT and SNIGGERS. Hear! Hear!

THE TOFF. And here's to Bill, who saved me twice to-night.

BILL. Couldn't have done it but for your cleverness, Toffy.

SNIGGERS. Hear, hear! Hear! Hear!

ALBERT. He foresees everything.

BILL. A speech, Toffy. A speech from our general.

ALL. Yes, a speech.

SNIGGERS. A speech.

THE TOFF. Well, get me some water. This whisky's too much for my head, and I must keep it clear till our friends are safe in the cellar.

BILL. Water? Yes, of course. Get him some water, Sniggers.

SNIGGERS. We don't use water here. Where shall I get it?

BILL. Outside in the garden. [_Exit SNIGGERS._]

ALBERT. Here's to future!

BILL. Here's to Albert Thomas, Esquire.

ALBERT. And William Jones, Esquire. [_Re-enter SNIGGERS, terrified._]

THE TOFF. Hullo, here's Jacob Smith, Esquire, J. P., alias Sniggers, back again.

SNIGGERS. Toffy, I've been thinking about my share in that ruby. I don't want it, Toffy; I don't want it.

THE TOFF. Nonsense, Sniggers. Nonsense.

SNIGGERS. You shall have it, Toffy, you shall have it yourself, only say Sniggers has no share in this 'ere ruby. Say it, Toffy, say it!

BILL. Want to turn informer, Sniggers?

SNIGGERS. No, no. Only I don't want the ruby, Toffy....

THE TOFF. No more nonsense, Sniggers. We're all in together in this. If one hangs, we all hang; but they won't outwit me. Besides, it's not a hanging affair, they had their knives.

SNIGGERS. Toffy, Toffy, I always treated you fair, Toffy. I was always one to say, Give Toffy a chance. Take back my share, Toffy.

THE TOFF. What's the matter? What are you driving at?

SNIGGERS. Take it back, Toffy.

THE TOFF. Answer me, what are you up to?

SNIGGERS. I don't want my share any more.

BILL. Have you seen the police? [_ALBERT pulls out his knife._]

THE TOFF. No, no knives, Albert.

ALBERT. What then?

THE TOFF. The honest truth in open court, barring the ruby. We were attacked.

SNIGGERS. There's no police.

THE TOFF. Well, then, what's the matter?

BILL. Out with it.

SNIGGERS. I swear to God....

ALBERT. Well?

THE TOFF. Don't interrupt.

SNIGGERS. I swear I saw something _what I didn't like_.

THE TOFF. What you didn't like?

SNIGGERS [_in tears_]. O Toffy, Toffy, take it back. Take my share. Say you take it.

THE TOFF. What has he seen? [_Dead silence, only broken by SNIGGERS'S sobs. Then steps are heard. Enter a hideous idol. It is blind and gropes its way. It gropes its way to the ruby and picks it up and screws it into a socket in the forehead. SNIGGERS still weeps softly, the rest stare in horror. The idol steps out, not groping. Its steps move off, then stop._]

THE TOFF. O, great heavens!

ALBERT [_in a childish, plaintive voice_]. What is it, Toffy?

BILL. Albert, it is that obscene idol [_in a whisper_] come from India.

ALBERT. It is gone.

BILL. It has taken its eye.

SNIGGERS. We are saved.

A VOICE OFF [_with outlandish accent_]. Meestaire William Jones, Able Seaman. [_THE TOFF has never spoken, never moved. He only gazes stupidly in horror._]

BILL. Albert, Albert, what is this? [_He rises and walks out. One moan is heard. SNIGGERS goes to the window. He falls back sickly._]

ALBERT [_in a whisper_]. What has happened?

SNIGGERS. I have seen it. I have seen it. O, I have seen it! [_He returns to table._]

THE TOFF [_laying his hand very gently on SNIGGERS's arm, speaking softly and winningly._] What was it, Sniggers?

SNIGGERS. I have seen it.

ALBERT. What?

SNIGGERS. O!

VOICE. Meestaire Albert Thomas, Able Seaman.

ALBERT. Must I go, Toffy? Toffy, must I go?

SNIGGERS [_clutching him_]. Don't move.

ALBERT [_going_]. Toffy, Toffy. [_Exit._]

VOICE. Meestaire Jacob Smith, Able Seaman.

SNIGGERS. I can't go, Toffy. I can't go. I can't do it. [_He goes._]

VOICE. Meestaire Arnold Everett Scott-Fortescue, late Esquire, Able Seaman.

THE TOFF. I did not foresee it. [_Exit._]

[THE CURTAIN.]